1954

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TECHNICAL INFORMATION

LATHING AND PLASTERING

PRODUCTS

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The Greatest Name in Building

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1954

ROCKLATH* PLASTER BASES

DESCRIPTION

Rocklath plaster base is a gypsum lath made in sheet form providing a rigid base for the economical application of gypsum plasters. It is composed of a special gypsum core, faced on the sides and long edges with paper specifically manufactured for this purpose.

Complies with: ASTM Designation C37-50 and Fed. Spec. SS-P-431a

FUNCTION AND UTILITY

Fireproof—When used with gypsum plasters Rocklath plaster bases provide fire ratings as shown in the technical data tables.

Strength—Gypsum plaster adheres to Rocklath with a strong bond. A pull of 864 lbs. per sq. ft. is required to separate the plaster from the lath, providing a safety factor of 144. The large sheets when plastered add appreciable distortion resistance to the frame.

Durability—Gypsum is a mineral not affected by time, decay, dry rot or normal humidity conditions. Does not attract vermin.

Economy—Rocklath is low in cost, has general market acceptance, is quickly and easily applied and permits substantial savings in plastering materials and labor.

Resistance to Sound Transmission—Rocklath and plaster used in conjunction with partition assemblies and USG* attachment systems provide substantially improved resistance to sound transmission. (See Technical Data)

LIMITATIONS OF USE

1. Not recommended for use as a plaster base for portland cement or lime plasters.

2. ⅜″ Rocklath is designed for supports not to exceed 16″ on centers. For spacings greater than 16″ and not more than 24″, ½″ Rocklath should be used.

3. Where ⅜″ Rocklath is used in conjunction with resilient clips (supported at long edges only) or where ½″ Rocklath is used on supports exceeding 16 inches o.c. Three coat plaster application is recommended to eliminate the possibility of sagging during plastering.

4. Where lath and plaster ceilings are located under roof construction, it is recommended that the space thus established be ventilated. Such ventilation, with or without vapor barrier and insulation, shall be designed in accordance with good engineering practice.

5. Rocklath plaster base should not be used where exposed to excessive moisture or humidity.

6. Fire Ratings shown in Technical Data Tables apply only for types, thickness and combinations listed.

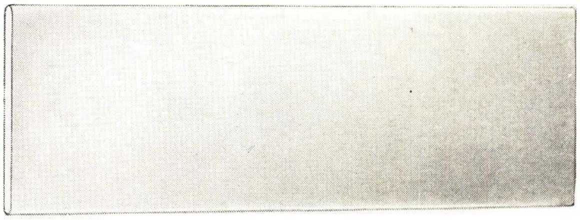
ROCKLATH PLASTER BASES—TYPES

PLAIN ROCKLATH

Recommended for nail-on application to wood and nailable steel framing and for clip attachment to wood framing, steel studs and suspended metal grillage.

Size: 16 x 48 inches, ⅜ or ½ inch thick.

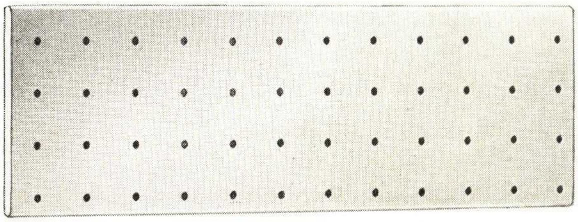
(Also made 16⅕ inches wide for Pacific Coast area)



PERFORATED ROCKLATH

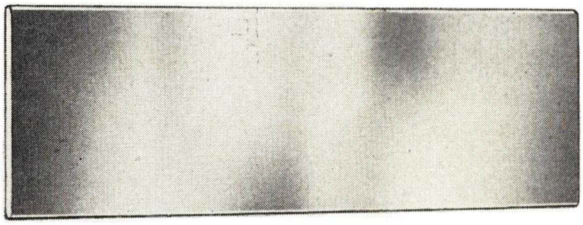
Perforated Rocklath is identical in all respects with plain Rocklath except ¾ inch round holes are punched through the lath 4 inches on center in each direction. One ¾″ diameter hole for each 16 sq. in. of lath area. This provides, in addition to the natural plaster bond, a mechanical key. Higher fire ratings are obtained by the use of perforated Rocklath and gypsum plaster. (See Technical Data Tables.)

Perforated Rocklath is not recommended for attachment to ceilings, either wood framing or metal grillage, where the only support provided is by clips at edges.



INSULATING ROCKLATH

Insulating Rocklath provides all the advantages of plain Rocklath as a rigid plaster base, and is manufactured in the same sizes. Bright aluminum foil is laminated to the back of plain Rocklath providing an effective vapor barrier.



"RED TOP," "BRIDJOINT," "CHESHIRE," "BONDCRETE," "PYROBAR," "ROCKLATH," "ORIENTAL," "SABINITE," "IVORY," "GRAND PRIZE," "CHAMPION," "STAR," "USG," "TRUSSTEEL," "STRUCTOLITE," "MORTASEAL," are registered trademarks; "BRACE-TITE" is a trademark owned by United States Gypsum and is used by it to distinguish its products. "RED TOP" identifies the particular plasters and finishes; "BRIDJOINT" identifies the particular lathing system; "BONDCRETE" identifies the particular plaster for concrete surfaces; "PYROBAR" identifies the particular gypsum partition tile; "ROCKLATH" identifies the particular gypsum lath or plaster base; "ORIENTAL" identifies the particular colored finishes; "SABINITE" identifies the particular acoustical plaster; "IVORY," "GRAND PRIZE" and "CHESHIRE" identify the particular hydrated limes; "CHAMPION" and "STAR" identify the particular white gauging plasters; "TRUSSTEEL" identifies the particular truss designed stud; "STRUCTOLITE" identifies a particular plaster; "BRACE-TITE" identifies the particular lathing system; "MORTASEAL" identifies the particular mason's lime; all manufactured by United States Gypsum.

ROCKLATH PLASTER BASES—CONT.

INSULATING ROCKLATH—CONT.

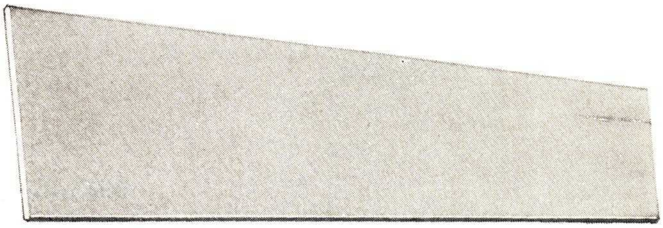
Insulation—When properly installed with at least a ¾ inch air space next to the foil, insulating ROCKLATH provides positive insulation having a resistance of 2.59. When used on horizontal surfaces, for retarding the downward flow of heat, its insulating value is about three times greater. (See Thermal Resistance Chart.) Repeated tests and field observations over an extended number of years show that, in normal use, there has been insufficient corrosion of the foil to harm the insulating and vapor barrier characteristics of insulating ROCKLATH. Tests also prove that the effect of dust on insulating ROCKLATH in a vertical position is negligible, and that a greater than normal dust deposit accumulation on insulating ROCKLATH in a horizontal position is required to seriously affect its insulating characteristics.

THERMAL RESISTANCE (R) OF INSULATING ROCKLATH
(½" OF PLASTER AND FACING AIR SPACE ¾" OR MORE)
ALL FIGURES BASED ON ASHVE GUIDE

Direction of Heat Flow	Thickness Insulating ROCKLATH	
	⅜"	½"
Downward—Coefficients for ceiling and sloping surfaces—summer conditions.	6.93	7.01
Upward—Coefficients for ceiling and sloping surfaces—winter conditions.	2.59	2.67
Horizontal—These coefficients for walls under summer or winter conditions.	2.59	2.67

Economy—Costs for application of insulating ROCKLATH plaster base are no more than for plain or perforated ROCKLATH. Material costs average approximately 1½ cents per square foot more than plain or perforated ROCKLATH.

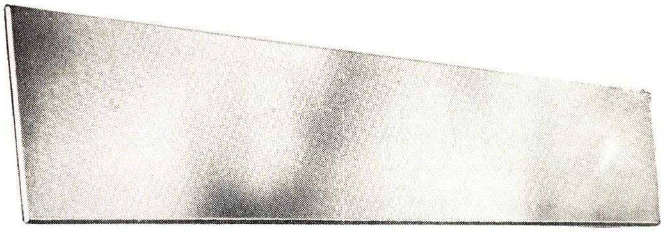
LONG LENGTH ROCKLATH PLASTER BASE



Long Length ROCKLATH is manufactured ½" thick, 24" wide, mill cut to ceiling high lengths as required up to 12 feet, and is formed with longitudinal "V" edges.

It is designed primarily for use as a plaster base in 2" solid ROCKLATH and plaster partitions. (See 2" Solid ROCKLATH and Plaster Partition Section for Details.)

LONG LENGTH INSULATING ROCKLATH



Long Length Insulating ROCKLATH is manufactured ⅜" thick, 24" wide with square edges, and mill cut to ceiling high lengths, as required, with bright aluminum foil laminated to the back side.

Designed primarily for furring exterior masonry wall construction. (See Section on USG Exterior Wall Furring System.)

ROCKLATH ACCESSORIES

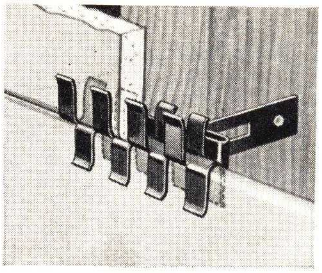
USG RESILIENT CLIPS

USG Resilient Clips are specially formed to provide a nonrigid or floating attachment of ⅜" ROCKLATH plaster bases to the structural frame, affording:

1. Increased protection against plaster cracking due to structural movement.
2. Increased sound transmission loss through the resilient attachment.

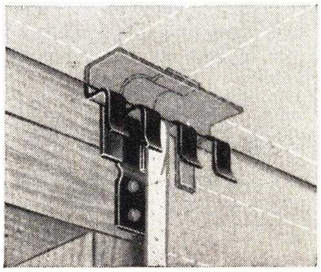
Resilient Clip R-1

For wood studs or joists spaced 16" o.c. attached by nailing with 13 gauge, 1⅛" lathing nail. ROCKLATH is floated ⅜" free of framing members and held in place by the prongs of the clip.

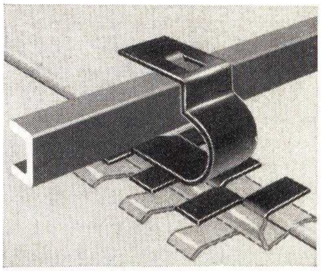


Resilient Clip R-2

For corners and angles of wood frame construction. Used in conjunction with the R-1 Clips.

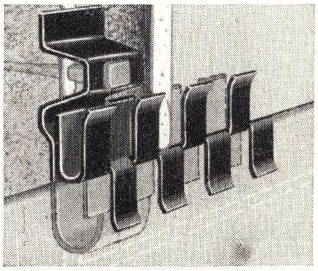


ROCKLATH ACCESSORIES—CONT.



Resilient Clip R-3

For suspended ceilings, resilient attachment of ⅜″ ROCKLATH to ¾″ cold rolled furring channels. ROCKLATH is held ½″ away from direct contact with the channel.

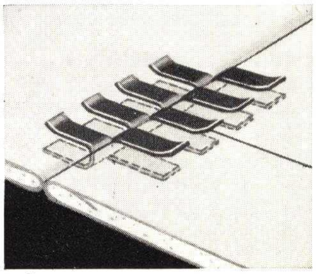


Resilient Clip R-5

For masonry walls. Nailed in place over Pyrobar, lightweight aggregate concrete units or clay tile, using 10d cut nails driven into the solid sections of the units or by using toggle bolts in hollow sections of the unit. Spaced 16″ o.c. vertically and horizontally. ROCKLATH is resiliently furred out from the face of the masonry.

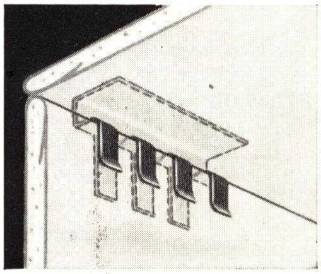
BRIDJOINT* Clips

Specially formed steel clips designed to provide a rigid alignment of abutting system lath where ends of lath do not fall at or on structural members.



BRIDJOINT Clip B-1

Field clip of ⅜″ ROCKLATH to support end joints of lath. Also manufactured for use with ½″ ROCKLATH.



BRIDJOINT Clip B-2

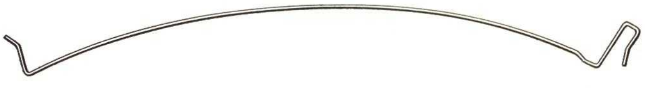
Used in conjunction with B-1 clips to eliminate nailing in corners and angles. For ⅜″ ROCKLATH only.

BRACE-TITE* Clips

Special wire clips for attaching ROCKLATH plaster base to metal grillages of ¾″ channels of TRUSSTEEL* Studs when spaced not over 16″ o.c.

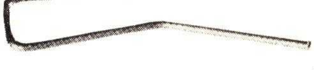
BRACE-TITE Field Clip BT-1

Used for suspended ceilings, exterior wall and beam furring and hollow pipe chase partitions. Designed to provide support across the full width of the lath and has spring action to increase rigidity.



BRACE-TITE Starter Clip BT-1

Used in conjunction with BT-1 field clip to start field course of lath.

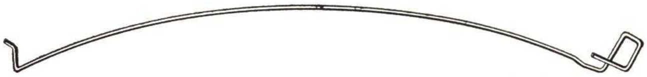


*T. M. Reg. U. S. Pat. Off.

ROCKLATH ACCESSORIES—CONT.

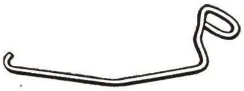
BRACE-TITE Field Clip BT-2

For attaching Rocklath plaster base to Trussteel Studs. Provides same support and rigidity as BT-1 field clip.



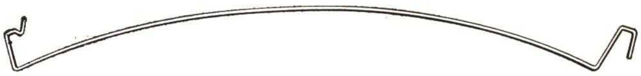
BRACE-TITE Starter Clip BT-2

Used in conjunction with BT-2 field clips to start first course of lath.



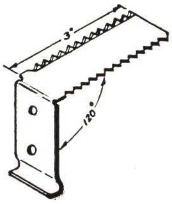
BRACE-TITE Acoustical Clip BT-A

Used for suspended ceilings with adhesive attachment of acoustical tile. Designed to provide support across the full width of the lath and not interfere with alignment of the tile.



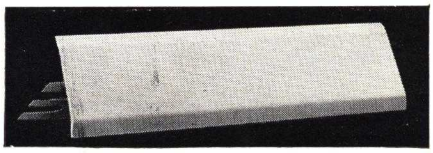
ADJUSTABLE WALL FURRING BRACKET

Made of 20 gauge galvanized steel with serrated edges for attaching ¾″ furring channels to exterior masonry walls.



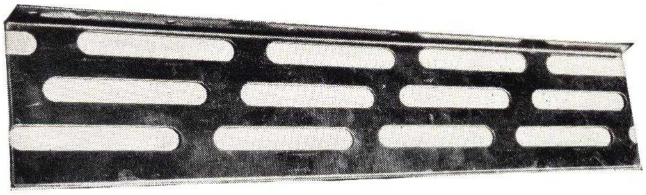
2″ PARTITION TERMINAL

Used as a partition cap and plaster ground or to form arched openings in 2″ solid plaster partitions with either metal lath or Rocklath plaster base. Cap is formed of 18 gauge steel, welded to 24 gauge punched runner and prime coated. Standard length is 8′2″.



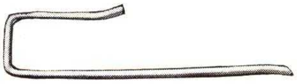
USG "L" SHAPED CEILING RUNNER

24 gauge black painted, sheet metal angle, for aligning and securing long length Rocklath to ceiling construction.



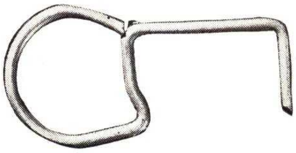
CEILING RUNNER CLIPS

Used for attaching ½″ long length Rocklath to "L" shaped ceiling runner.



USG BRACING CLIP

For attaching ¾″ channels to ½″ long length Rocklath as temporary braces in 2″ solid Rocklath and plaster partition construction.



USG METAL BASE & CLIPS (See page 21 of this section.)

USG TRUSSTEEL* CLIPS (See page 23 of this section).

CORNER BEAD, CORNERITE, METAL CASINGS, STRIPLATH, ETC.

(See AIA File No. 20-B covering USG Metal Lath and Accessories, on pages 19 and 20 of this section.)

*T. M. Reg. U. S. Pat. Off.

ROCKLATH RESILIENT LATHING SYSTEM

DESCRIPTION

Resilient Lathing System is a method for the attachment of ROCKLATH plaster base, floating it free from the framing, basic wall or ceiling construction by means of resilient spring clips.

FUNCTION AND UTILITY

Excellent Resistance to Sound Transmission—The National Bureau of Standards assigns a sound transmission loss rating of 52.2 decibels to a wood stud partition with R-1 resilient clips, gypsum lath and plaster both sides.

Maximum Crack Resistance—Spring clips permit limited movement of framing members, their resilience reducing the strain on the plaster coat.

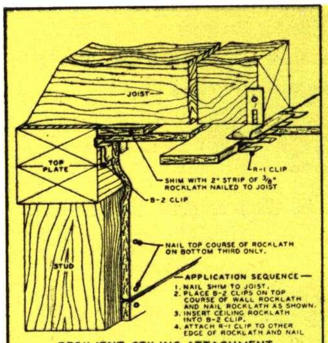
Fireproof—Tests at a nationally recognized fire testing laboratory (name on request) give a one hour fire resistance rating to a wood stud partition (load bearing) with perforated ROCKLATH attached with R-1 Resilient Clips each side and plastered to ½″ grounds over the lath with gypsum-perlite 100:2½, 100:2½. When plastered to ½″ grounds over the lath with gypsum-sand 1:2, 1:2, fire resistance period is 58½ minutes.

Flexible—May be applied to wood, steel or masonry construction.

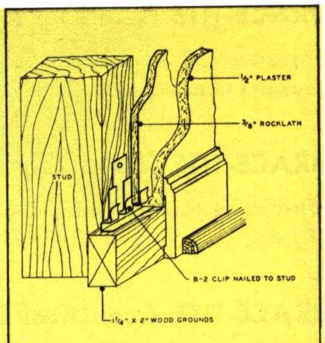
Cost—The increase in cost is only nominal and represents principally the additional cost of clips over nail-on system of application.

LIMITATIONS OF USE

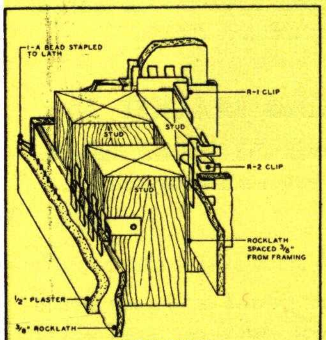
1. The same as for plain ROCKLATH plaster base.
2. Use either plain or perforated ROCKLATH for side wall construction.
3. Perforated ROCKLATH should not be used on ceilings with resilient ROCKLATH clips. Use plain ROCKLATH plaster base with a full scratch coat, raked and *allowed to set*, followed by a brown coat to a total thickness of 7/16″ over the lath.


JOIST
TOP PLATE
STUD
R-1 CLIP
SHIM WITH 2″ STRIP OF ⅜″ ROCKLATH NAILED TO JOIST
B-2 CLIP
NAIL TOP COURSE OF ROCKLATH ON BOTTOM THIRD ONLY.
APPLICATION SEQUENCE—
1. NAIL SHIM TO JOIST.
2. PLACE B-2 CLIPS ON TOP COURSE OF WALL ROCKLATH AND NAIL ROCKLATH AS SHOWN.
3. INSERT CEILING ROCKLATH INTO B-2 CLIP.
4. ATTACH R-1 CLIP TO OTHER EDGE OF ROCKLATH AND NAIL

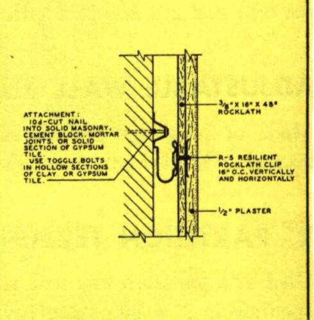
RESILIENT CEILING ATTACHMENT
WITH NAIL-ON SIDE WALL



BASE DETAIL - RESILIENT WALL



CORNER DETAIL
RESILIENT WALL CONSTRUCTION


ATTACHMENT:
10d-CUT NAIL INTO SOLID MASONRY, CEMENT BLOCK, MORTAR JOINTS, OR SOLID SECTION OF GYPSUM TILE.
USE TOGGLE BOLTS IN HOLLOW SECTIONS OF CLAY OR GYPSUM TILE.
⅜″ X 16″ X 48″ ROCKLATH
R-5 RESILIENT ROCKLATH CLIP 16″ O.C. VERTICALLY AND HORIZONTALLY
½″ PLASTER

RESILIENT ATTACHMENT
TO MASONRY PARTITIONS

BRIDJOINT LATHING SYSTEM

DESCRIPTION

The BRIDJOINT Lathing System is a clip application of ROCKLATH plaster base on walls and ceilings so designed that the ends (16″ dimension) of the lath fall between (not on) framing members.

Types B-1 and B-2 clips for ⅜″ ROCKLATH.
B-1 for ½″ ROCKLATH.

FUNCTION AND UTILITY

Resistance to Cracking—Removal of gypsum lath ends from framing members increases resistance to cracking at the most vulnerable points.

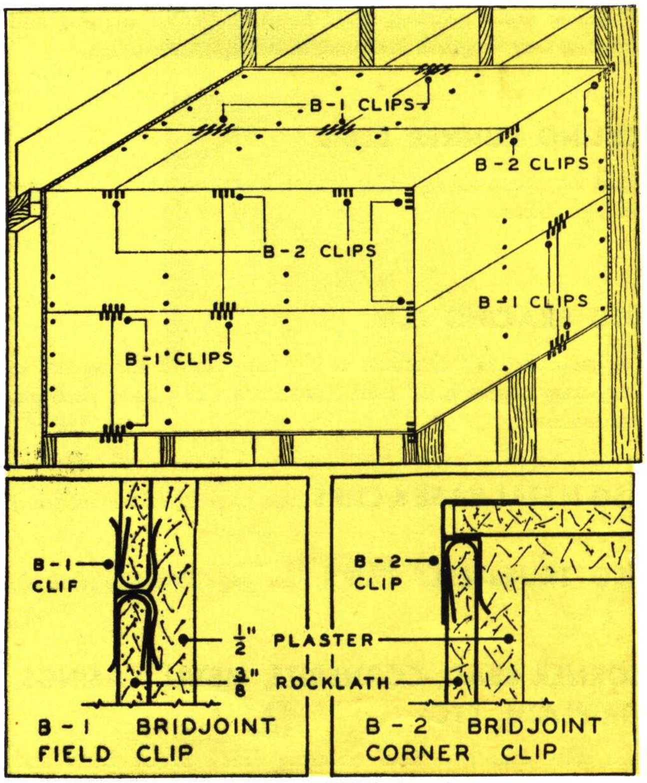
Framing Members need not be exactly 16″ on centers, as the ends of the lath may occur at random except at corners.

Adaptable Over Nailable Steel Framing if framing members are spaced not more than 24″ on center, and provided that ½″ thick, ROCKLATH is used in lieu of ⅜″. Nails of not less than ⅜″ head shall be used and must be of sufficient length to extend beyond the nail retention curve of the member, or of special design to lock in member as recommended by manufacturers of the framing.

Cost—Twenty-five per cent less nailing of the lath is required. Cornerite and nailing are eliminated in corners, making for speed and economy. This results in only a slight increase over the cost of nail-on construction.

LIMITATIONS OF USE

Same as for plain ROCKLATH, see page 2.



B-1 BRIDJOINT FIELD CLIP

B-2 BRIDJOINT CORNER CLIP

Details of BRIDJOINT Lathing System

BRACE-TITE* LATHING SYSTEM

DESCRIPTION

The Brace-Tite Lathing System is a mechanical suspension of Rocklath plaster base to standard metal grillage (¾″ channels not over 16″ o.c.).

FUNCTION AND UTILITY

Rigidity Similar To Nail-On. The field clips, spaced 16 inches o.c., support the Rocklath across the full width of the board. The spring action of the field clip increases rigidity.

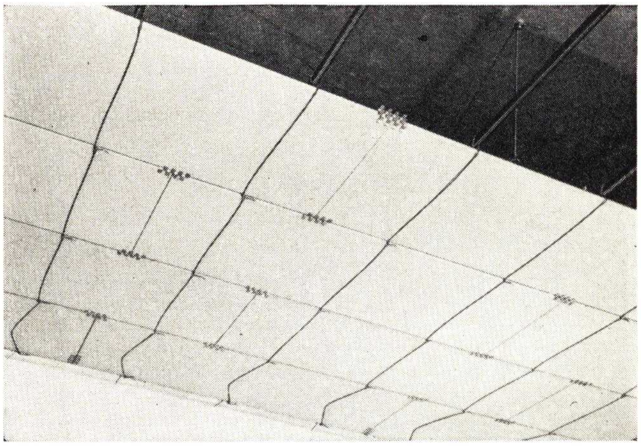
Fireproof. Under bar joist construction with 2″ concrete slab ⅜″ Riblath above, channels spaced 16″ o.c., ⅜″ perforated Rocklath, rating is one hour with Structo-Lite to ⅝″ grounds over face of lath: same with gypsum-perlite 100:2, 10:3. To 1″ grounds over lath, 1½″ hours; same with supplementary 14 gauge diagonal wires and Structo-Lite to ½″ grounds, 2 hours; same with channels 12″ o.c. and Structo-Lite to ⅝″ grounds, 3 hours; same with 20 gauge mesh wire instead of 14 gauge wire and gypsum-perlite 100:2, 100:3 plaster to 1″ grounds 4 hours—(See technical data table).

Easy To Apply. The loop of the Brace-Tite field clip is dropped over the channel and hooked into the eye of the preceding clip.

Vapor Permeability. With Insulating Rocklath, tests at a nationally recognized laboratory gave a vapor permeability of 0.79 perms (See page 4).

Rapid Erection. Only three clips are required for each sheet of Rocklath plaster base plus two USG Bridjoint* B-1 clips at the end joint.

No Special Materials. Standard ¾″ cold rolled channels may be used on conventional 16-inch or 12-inch spacing. Plain, Perforated or Insulating Rocklath plaster base may be used.



Acoustical Tile. A special field clip is available for use where acoustical tile is to be cemented direct to the gypsum lath.

Reinforces Plaster. The wire clip embedded in the plaster increases crack resistance.

Cost. As the Brace-Tite system requires only two coat plaster work, its use results in economy of application. The cost under normal conditions will approximate that of other types of mechanical suspension.

BRACE-TITE TRUSSTEEL* STUD ROCKLATH PARTITION

DESCRIPTION—A non-load-bearing partition of TRUSSTEEL Studs, ROCKLATH Plaster Base with BRACE-TITE Clip attachment and plaster that finishes to overall thickness of 4½″, 5¼″, 6″ and 8″, depending on stud size.

One Hour Fire Rating—Passed one hour fire test at nationally recognized testing laboratory.

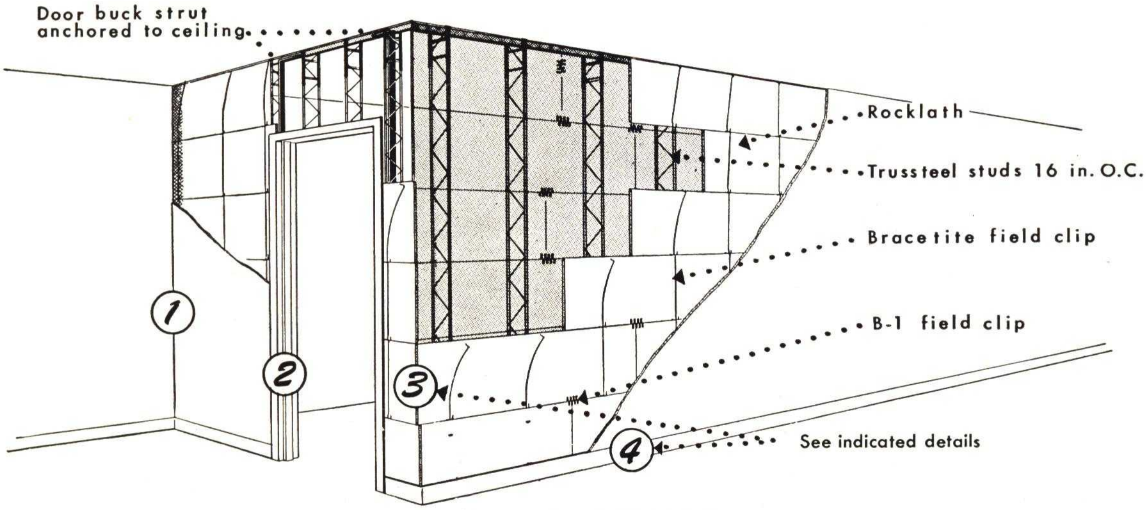
45 Decibel Sound Reduction—The National Bureau of Standards assigns a sound transmission loss rating of 46.5 decibels.

Versatile—2½″, 3¼″, 4″ and 6″ TRUSSTEEL Studs provide wall thicknesses to meet job requirements.

Light Weight—3¼″ stud partition using sand aggregate weights 16.1 lb. per square foot. With perlite aggregate, 11.5 lb. per square foot.

Strength—Comparable to wood or metal stud partitions using ROCKLATH or metal lath and plaster.

Economy—Incorporates the recognized economy of plastering over gypsum lath with the advantages of an incombustible hollow partition providing space for conduits, ducts, etc.



(See page 9 for details)

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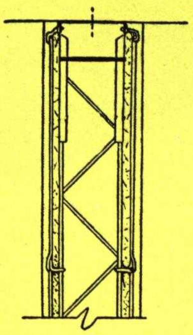
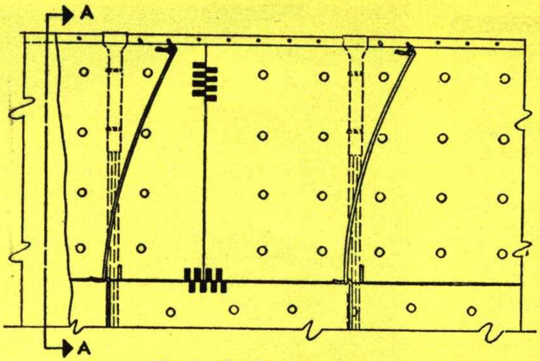
*T. M. Reg. U. S. Pat. Off.

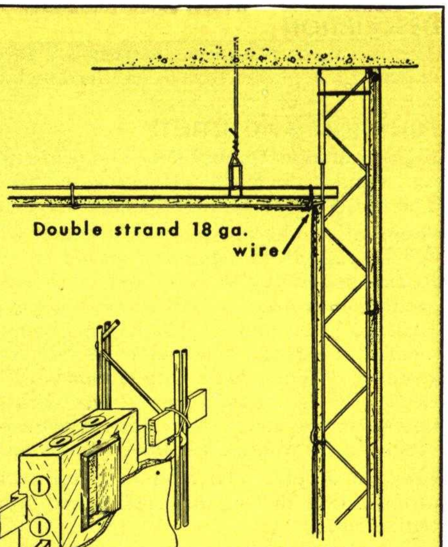
BRACE-TITE TRUSSTEEL STUD ROCKLATH PARTITION



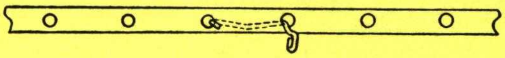
Section A-A



Typical Elevation at Ceiling

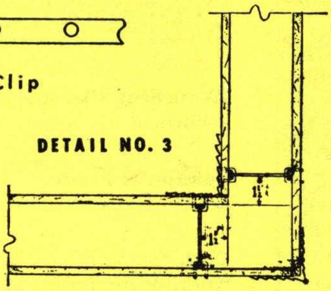


Typical Hung Ceiling Section

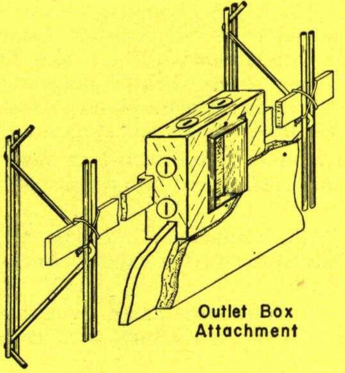


Enlarged View of Starter Clip

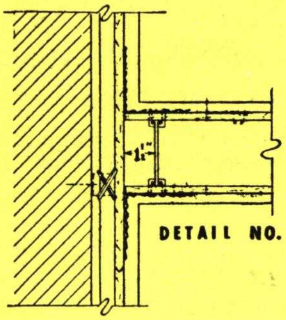
DETAIL NO. 3



Exterior Corner

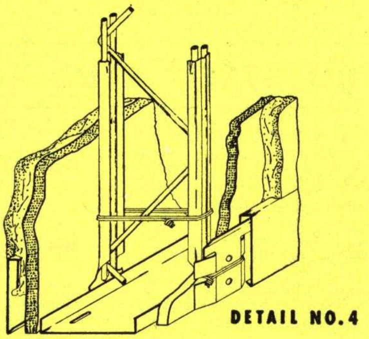


Outlet Box Attachment



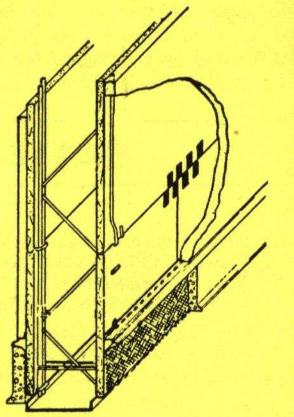
DETAIL NO. 1

Abutting Masonry Wall

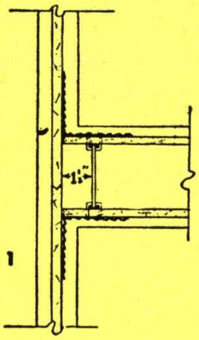


DETAIL NO. 4

USG Metal Base
with Stud Base Clip

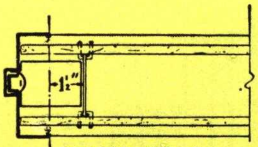


Terrazzo Base



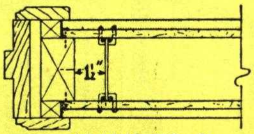
DETAIL NO. 1

Abutting 2in. Solid Partition



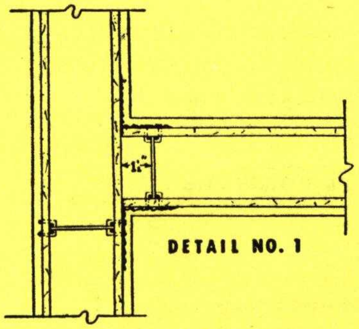
DETAIL NO. 2

Metal Door Buck



DETAIL NO. 2

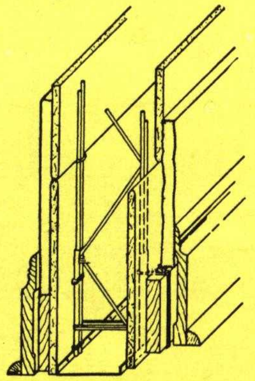
Wood Door Buck



DETAIL NO. 1

Abutting Trussteel Partition

STUD WIDTH		PARTITION THICKNESS
2½"	-	4½"
3¼"	-	5¼"
4 "	-	6 "
6 "	-	8 "



DETAIL NO. 4

Wood Base Trim

ROCKLATH AND PLASTER COLUMN FIREPROOFING

DESCRIPTION

ROCKLATH plaster base is wired in place against the structural steel column and plastered with gypsum cement plaster and sand or perlite aggregate in proportions and thickness required to give fire rating desired. In four hour ratings, 20 gauge galvanized 1″ hexagonal mesh wire fabric is used in addition to the ROCKLATH.

FUNCTION AND UTILITY

Fireproof—Gypsum is incombustible and will not communicate high temperatures until completely calcined, a very slow process. Details for column fire ratings of 1, 1½, 2, 3 and 4 hours are given below.

Light Weight—ROCKLATH and plaster fireproofing of structural steel columns weigh from 6 pounds for 1 hour protection to 11 pounds for 4 hour protection per square foot of completed surface area.

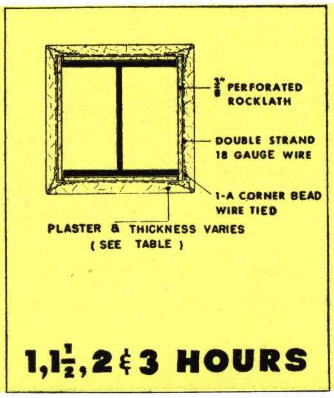
Low In Cost—Use of standard lathing and plastering materials, combined with easy attachment of lath and the obvious economy of plastering over gypsum lath, provides low cost column fireproofing.

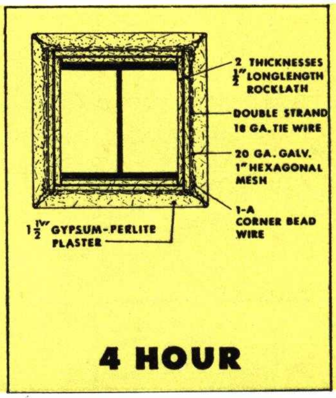
LIMITATIONS OF USE

1. Steel corner angles, 2″ x 2″, 4′ high, are required for warehouse or storage space columns similar to that required for other column fire protection.

RATINGS VARY WITH PLASTER THICKNESS AND AGGREGATE RATIO

RATING	THICKNESS	AGGREGATE	RATIO
1 HR.	1/2″	SAND	1·2 1/2
1 1/2 HR	5/8″	SAND	1·2 1/2
2 HR	1″	PERLITE	100·2 1/2
3 HR	1 3/4″	PERLITE	100·2 100·3


3/8″ PERFORATED ROCKLATH
DOUBLE STRAND 18 GAUGE WIRE
1-A CORNER BEAD WIRE TIED
PLASTER & THICKNESS VARIES (SEE TABLE)
1,1½,2 & 3 HOURS


2 THICKNESSES ½″ LONGLENGTH ROCKLATH
DOUBLE STRAND 18 GA. TIE WIRE
20 GA. GALV. 1″ HEXAGONAL MESH
1-A CORNER BEAD WIRE
1½″ GYPSUM-PERLITE PLASTER
4 HOUR

2″ SOLID ROCKLATH AND PLASTER PARTITION

DESCRIPTION

The 2″ Solid ROCKLATH and Plaster Partition is a studless, non-loadbearing partition consisting of long length ROCKLATH plaster base, held vertically in floor and ceiling runners, and plastered on both sides.

Size of ROCKLATH—½″ thick, 24″ wide by ceiling-high lengths with longitudinal "V" edges.

FUNCTION AND UTILITY

Fireproof—Composed essentially of gypsum, the partition is incombustible and will not transmit temperatures greatly in excess of 212° until completely calcined—a slow process. See Technical Data for one hour fire rating.

Lightweight—Only 16 lbs. per sq. ft. of finished partition.

Space Saving—Saves 40 to 60 per cent of space occupied by conventional partitions. In every five lineal feet, a 2″ partition creates one extra square foot of usable space over a 4½″ partition.

Lateral Strength—The records of an official impact test show that a 60-lb. weight, traveling through a 4-foot fall, failed to produce a discernible crack on a full sized partition after three successive impacts.

Cost—Without consideration to space saving, the actual cost is comparable and competitive with conventional wood or metal studs with ROCKLATH plaster base and plaster, both sides.

Complies with FHA requirements for rental housing.

LIMITATIONS OF USE

1. For non-bearing partitions only.
2. Limiting height twelve feet.
3. For 1 hour fire rating, RED TOP* plaster sanded 1:1, 1:2, STRUCTO-LITE* or gypsum-perlite 100:2, 100:3 must be used.

TECHNICAL DATA

(All tests made by nationally recognized testing laboratories, except as noted)

Construction	Limiting Height	Weight Per Square Foot	Fire Rating	Sound Transmission Loss
½″ Long-length V-edge ROCKLATH plastered both sides with ¾″ RED TOP Plaster, sanded 1:1, 1:2	12 Ft.	16 Lbs.	1 Hr.	
Same, but gypsum-sand 1:2, 1:3	12 Ft.	16 Lbs.	45 Min.	37.3
Same, but gypsum-perlite 100:2, 100:3	12 Ft.	9 Lbs.	1½ Hr.	36.8

(See page 10 for details)

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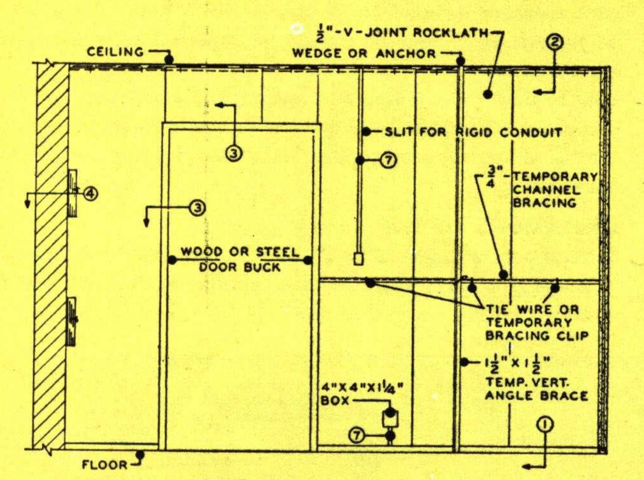
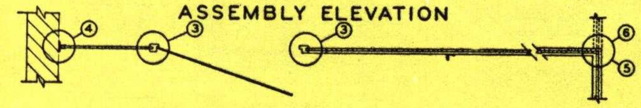
*T. M. Reg. U. S. Pat. Off.

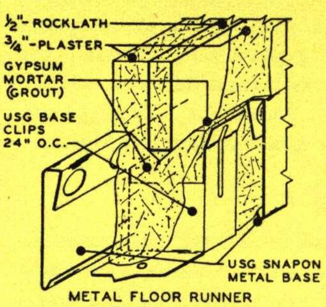
2" SOLID ROCKLATH AND PLASTER PARTITION



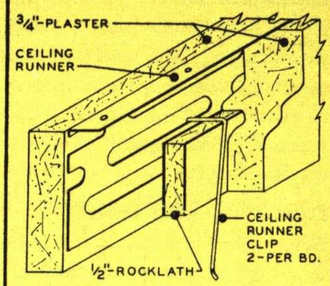
ASSEMBLY ELEVATION



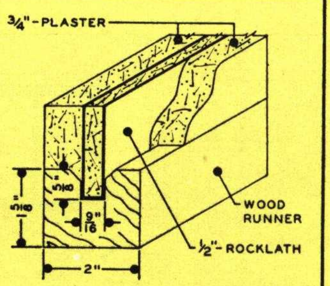
PLAN



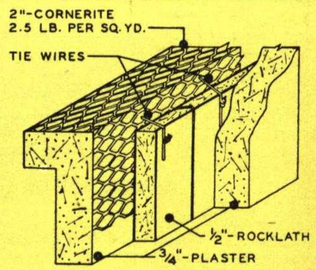
METAL FLOOR RUNNER
DETAIL-1



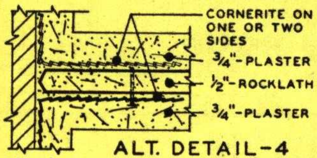
METAL CEILING RUNNER
DETAIL-2



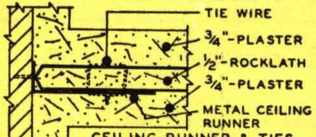
ALTERNATE-WOOD FLOOR RUNNER
DETAIL-1



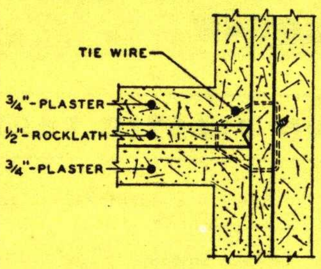
ALTERNATE
CEILING RUNNER-SINGLE CORNERITE
DETAIL-2



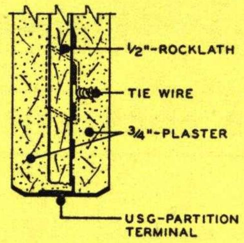
ALT. DETAIL-4



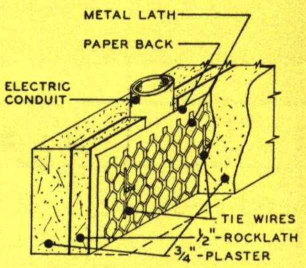
CEILING RUNNER & TIES
DETAIL-4



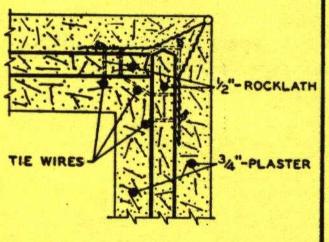
DETAIL-6



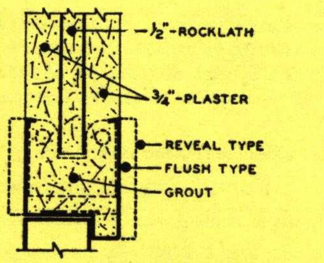
DETAIL
METAL PARTITION END



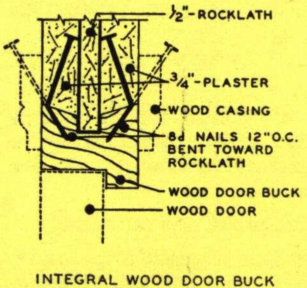
RIGID CONDUIT
DETAIL-7



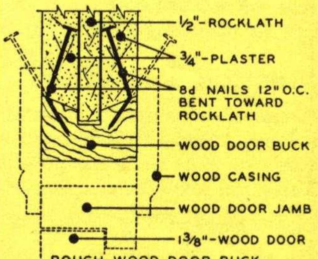
DETAIL-5



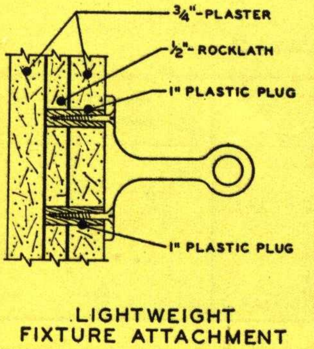
METAL DOOR BUCK
DETAIL-3



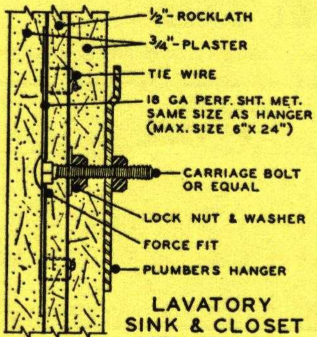
INTEGRAL WOOD DOOR BUCK
DETAIL-3



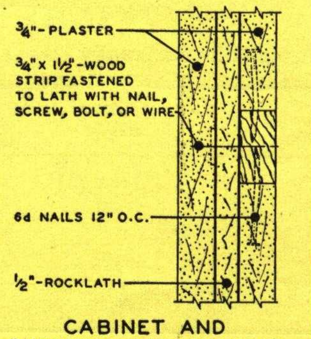
ROUGH WOOD DOOR BUCK
SEPARATE JAMB
DETAIL-3



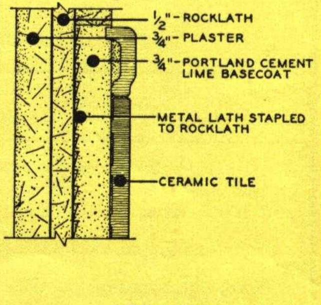
LIGHTWEIGHT
FIXTURE ATTACHMENT



LAVATORY
SINK & CLOSET
ATTACHMENT


¾"-PLASTER
¾"x 1½"-WOOD STRIP FASTENED TO LATH WITH NAIL, SCREW, BOLT, OR WIRE
6d NAILS 12" O.C.
½"-ROCKLATH

CABINET AND
SHELVING ATTACHMENT


½"-ROCKLATH
¾"-PLASTER
¾"-PORTLAND CEMENT LIME BASECOAT
METAL LATH STAPLED TO ROCKLATH
CERAMIC TILE

CERAMIC
TILE ATTACHMENT

EXTERIOR WALL FURRING SYSTEM

DESCRIPTION

The Exterior Wall Furring System is a method of attaching ¾″ channels and long length Insulating Rocklath plaster base to exterior walls using USG Adjustable Wall Furring Brackets.

FUNCTION AND UTILITY

Furrs and Aligns Exterior Wall—Attachment of ¾″ channels and Long Length Insulating Rocklath to exterior masonry walls using USG Adjustable Wall Furring Brackets, furrs and aligns wall providing proper air space and a uniformly even plaster base.

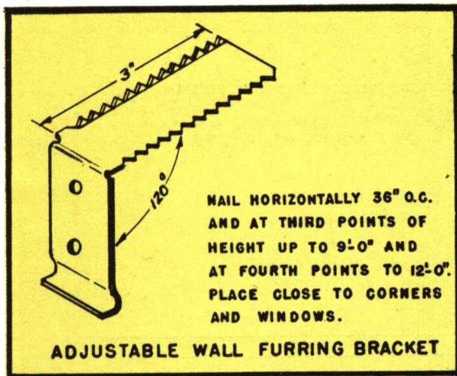
Sturdy—Rust Resistant—Easily Attached—USG Adjustable Wall Furring Brackets are made from 20 gauge tight coat galvanized steel. Easily attached to masonry walls using ⅝″ stub nails for concrete and 2″ cut nails on masonry, or laid in mortar joints.

Insulation—Employing the use of long length Insulating Rocklath, the plastered exterior wall provides insulation equivalent to ½″ fiber insulating board. (See Insulating ROCKLATH plaster base, page 2.)

Vapor Barrier—Insulating Rocklath plaster base is an effective safeguard against condensation.

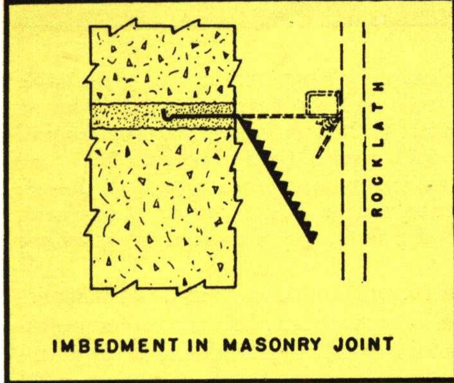
LIMITATIONS

1. Limiting height is 12′0″ unless special details are incorporated.
2. Minimum air space of 1″ required.
3. Space between back of lath and the wall shall not be filled with wool or other materials.

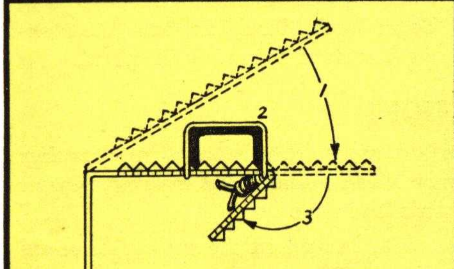


NAIL HORIZONTALLY 36″ O.C. AND AT THIRD POINTS OF HEIGHT UP TO 9′-0″ AND AT FOURTH POINTS TO 12′-0″. PLACE CLOSE TO CORNERS AND WINDOWS.

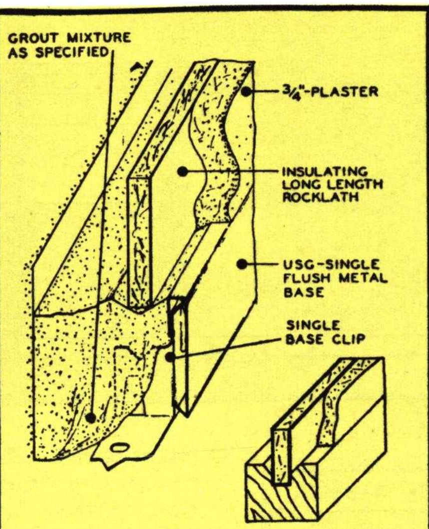
ADJUSTABLE WALL FURRING BRACKET



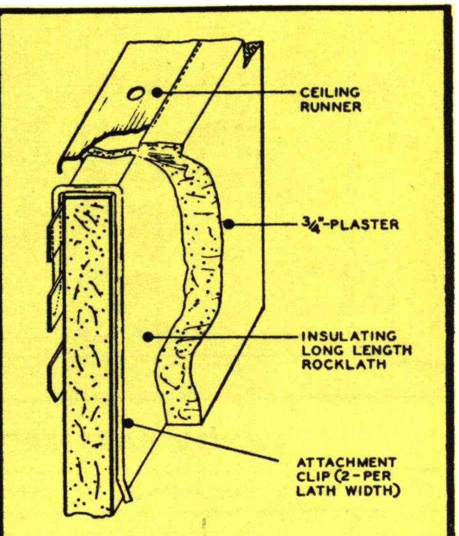
IMBEDMENT IN MASONRY JOINT



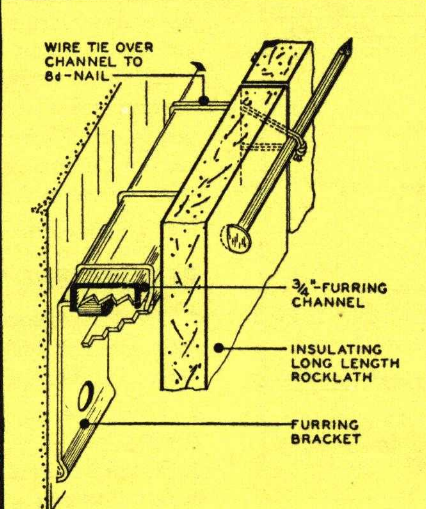
1. AFTER ATTACHMENT, BEND BRACKET TO HORIZTAL POSITION.
2. WIRE TIE PLUMBED CHANNEL TO BRACKET 1/4″ MIN. FROM WALL.
3. BEND EXCESS DOWN.


GROUT MIXTURE AS SPECIFIED
¾″-PLASTER
INSULATING LONG LENGTH ROCKLATH
USG-SINGLE FLUSH METAL BASE
SINGLE BASE CLIP

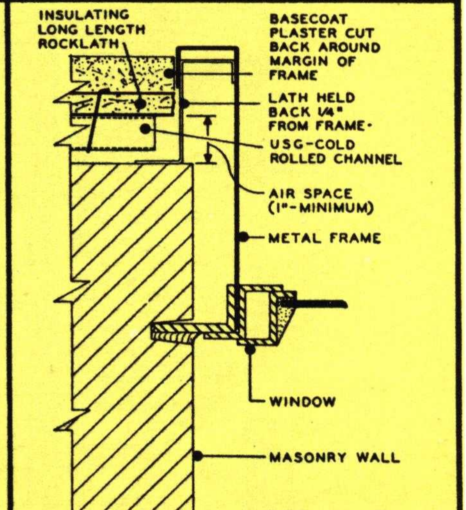
DETAIL-3


CEILING RUNNER
¾″-PLASTER
INSULATING LONG LENGTH ROCKLATH
ATTACHMENT CLIP (2-PER LATH WIDTH)

DETAIL-1


WIRE TIE OVER CHANNEL TO 8d-NAIL
¾″-FURRING CHANNEL
INSULATING LONG LENGTH ROCKLATH
FURRING BRACKET

DETAIL-2

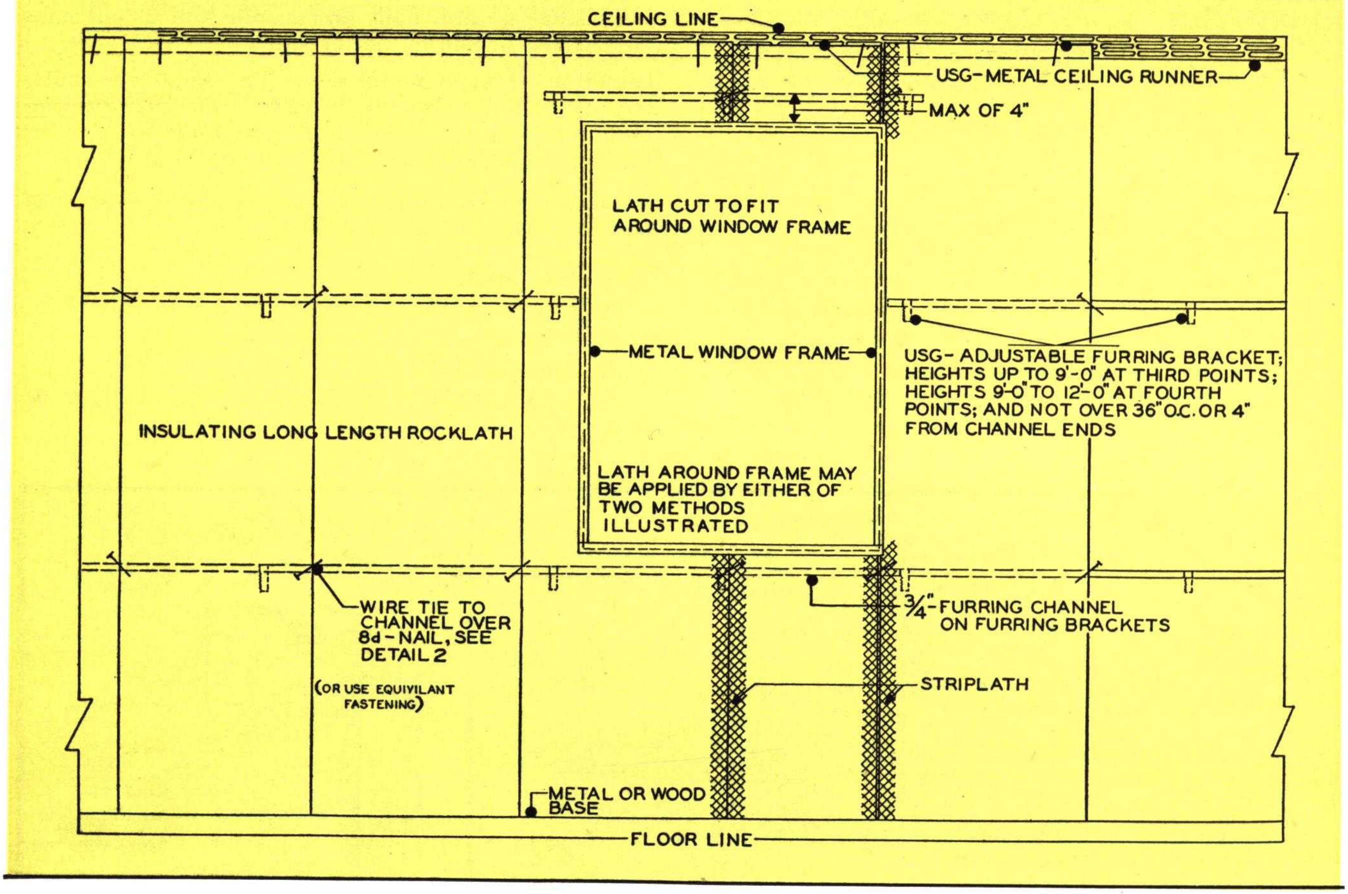

INSULATING LONG LENGTH ROCKLATH
BASECOAT PLASTER CUT BACK AROUND MARGIN OF FRAME
LATH HELD BACK ¼″ FROM FRAME
USG-COLD ROLLED CHANNEL
AIR SPACE (1″-MINIMUM)
METAL FRAME
WINDOW
MASONRY WALL

DETAIL AT WINDOW JAMB

HEAD AND APRON DETAIL SIMILAR

(For details of use with long length Rocklath see page 12)

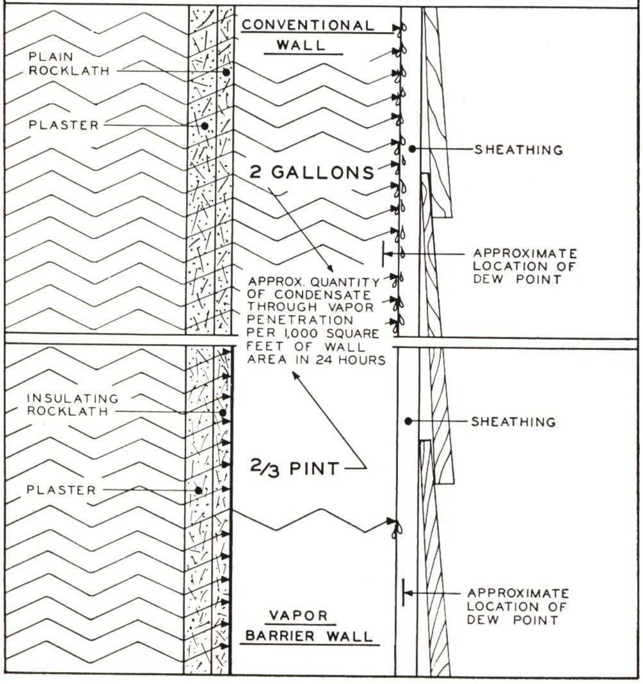
EXTERIOR WALL FURRING SYSTEM (Using Long Length Insulating ROCKLATH)


CEILING LINE
USG-METAL CEILING RUNNER
MAX OF 4"
LATH CUT TO FIT AROUND WINDOW FRAME
METAL WINDOW FRAME
USG-ADJUSTABLE FURRING BRACKET; HEIGHTS UP TO 9'-0" AT THIRD POINTS; HEIGHTS 9'-0" TO 12'-0" AT FOURTH POINTS; AND NOT OVER 36" O.C. OR 4" FROM CHANNEL ENDS
INSULATING LONG LENGTH ROCKLATH
LATH AROUND FRAME MAY BE APPLIED BY EITHER OF TWO METHODS ILLUSTRATED
WIRE TIE TO CHANNEL OVER 8d-NAIL, SEE DETAIL 2
(OR USE EQUIVILANT FASTENING)
3/4"-FURRING CHANNEL ON FURRING BRACKETS
STRIPLATH
METAL OR WOOD BASE
FLOOR LINE

VAPOR BARRIERS

ILLUSTRATION OF IMPORTANCE OF VAPOR BARRIER

INSIDE ATMOSPHERE		OUTSIDE ATMOSPHERE
70°F	TEMPERATURE	10°F
45%	RELATIVE HUMIDITY	90%
3.63	GRAINS MOISTURE PER CU. FT.	0.69
0.332 IN.HG.	RESULTANT VAPOR PRESSURE	0.067 IN.HG.


CONVENTIONAL WALL
PLAIN ROCKLATH
PLASTER
SHEATHING
2 GALLONS
APPROXIMATE LOCATION OF DEW POINT
APPROX. QUANTITY OF CONDENSATE THROUGH VAPOR PENETRATION PER 1,000 SQUARE FEET OF WALL AREA IN 24 HOURS
INSULATING ROCKLATH
SHEATHING
2/3 PINT
PLASTER
APPROXIMATE LOCATION OF DEW POINT
VAPOR BARRIER WALL

Vapor Barrier—The insulating ROCKLATH applied to the inside face of all exterior walls and top floor ceilings provides an effective vapor barrier to help safeguard against harmful condensation within such spaces. Since aluminum foil is one of the best vapor barriers known and used commercially F.H.A. allows (at the discretion of local offices) the use of insulating ROCKLATH with blowing wool, the aluminum foil providing the vapor barrier.

When the atmospheric conditions indicated in the accompanying chart are of considerable duration, the amount of condensation in the "Conventional Wall" is sufficient to damage the interior decoration, exterior paint, or any of the other wall components. In the "Vapor Barrier Wall," however, the quantity of condensate is so minor as to be readily dissipated.

RECOMMENDATIONS

1. An efficient vapor barrier should be installed in all exterior walls and ceilings in locations where below freezing weather occurs for extended periods of time.

2. Vapor barrier should be located on the warm side of the exterior wall or top floor ceiling.

3. Vapor barrier should have a vapor permeability of not more than 1.00 perms. (Grains per square foot per hour per inch of mercury vapor pressure difference.)

TECHNICAL DATA

Tests at a nationally recognized testing laboratory gave a vapor permeability for Insulating ROCKLATH applied to wood studs in the normal manner with ½ inch gypsum plaster of 0.67 perms†.

ROCKLATH PLASTER BASES

TECHNICAL DATA

All Tests Made by Nationally Recognized Laboratories, Unless Otherwise Noted

PARTITIONS

Construction	Total Weight Lbs. per Sq. Ft. Lath and Plaster Only	Plaster & Aggregate	Thickness	Fire Rating	Sound Transmission Loss
⅜″ Plain ROCKLATH, nail-on 2″x4″ studs.	12.0	Gypsum-Sand 1:2—1:2	½″	45 min.	41.1
⅜″ Plain ROCKLATH nail-on, 2″x4″ studs.	11.0	Wood fiber plaster.	½″	1 hr.	41.1
⅜″ Perforated ROCKLATH nail-on, 2″x4″ studs.	12.0	Gypsum-Sand 1:2—1:2	½″	1 hr.	41.1
⅜″ Perforated ROCKLATH nail-on, 2″x4″ studs.	8.0	Gypsum-Perlite 100:2½	½″	1 hr.	
⅜″ Perforated ROCKLATH nail-on, 2″x4″ studs.	8.0	Gypsum-Vermiculite 100:2½	½″	1 hr.	
⅜″ Perforated ROCKLATH attached by BRACE-TITE system to TRUSSTEEL Studs.	8.0	STRUCTO-LITE	½″	1 hr.	
	12.0	Gypsum-Sand 1:2—1:2	½″	1 hr.	46.5

FLOORS AND CEILINGS

Construction	Total Weight Lbs. per Sq. Ft. Lath and Plaster Only	Plaster & Aggregate	Thickness	Fire Rating	Sound Transmission Loss
⅜″ Perforated ROCKLATH nailed to 2″x10″ wood joists with 5/16″ headed nails. ¾″ sub floor—diaphragm of asbestos paper—T&G finished floor.	6.0	Gypsum-Sand 1:2—1:2	½″	30 min.	
Same as above except nails had ⅜″ head.	6.0	Gypsum-Sand 1:2—1:2	½″	45 min.	
⅜″ Perforated ROCKLATH nailed to 2″x10″ wood joists with ⅜″ headed nails (5 per lath per joist). Striplath applied to joists with ¾″ nails having ½″ head.	6.0	Gypsum-Sand 1:2—1:2	½″	1 hr.	
⅜″ Perforated ROCKLATH nailed to 2″x10″ wood joists with 19/64″ head nails—4 per lath per joist.	4.0	Gypsum-Perlite 100:2½	½″	1 hr.	
		Gypsum-Vermiculite 100-2½	½″	1 hr.	
⅜″ Plain ROCKLATH nailed to 2″x10″ wood joists with 19/64″ head nails—4 per lath per joist—20 ga. 1″ hex. wire mesh nailed to joists through lath.	4.0	Gypsum-Perlite 100:2½	½″	1½ hr.	
⅜″ Perforated ROCKLATH attached by BRACE-TITE system under steel joists. 2″ concrete slab. Channels 16″ o.c.	4.0	STRUCTO-LITE (1) or gypsum perlite 100:2½	⅝″	1 hr.	
Same as above but with channels 16″ o.c. and supplementary 14 Ga. diagonal wires.	4.0	STRUCTO-LITE (1) or gypsum perlite 100:2½	½″	2 hr.	
Same as above but with channels 12″ o.c. and supplementary 14 Ga. diagonal wires.	4.0	STRUCTO-LITE (1) or gypsum perlite 100:2½	⅝″	3 hr.	

(1) Estimated to be same as plain ROCKLATH with sanded plaster.

GYPSUM LATHING SPECIFICATIONS

Notes to Architect: *Following are complete specifications for* Rocklath *plaster bases, including nail-on and clip attachment, and partition systems. Select paragraphs required to complete particular job specifications, taking into account the type of lath, type of plaster and minimum plaster thickness required by certain systems and fire ratings:*

Where lath and plaster ceilings are located under roof construction, it is recommended that the space thus established be ventilated. Such ventilation, with or without vapor barrier and insulation, shall be designed in accordance with accepted engineering practice.

Where reinforced concrete or concrete fireproofed structural steel construction is used, it is recommended that relief from stresses imposed by such members be provided by locating the partitions so that the face of the plaster does not continue in the same plane across the face of such columns or beams. If partitions are not so located, one of the methods given below should be used to provide partial isolation from the faces of the structural members, in the following order of preference:

1. Furring away from the face of such members.

2. By allowing the Rocklath *to carry across the faces of such structural members.*

3. By scatter nailing No. 30 asphalt felt and 2.5 lb. diamond mesh metal lath across the faces of such structural members, carrying felt and metal lath out at least 1″ onto the Rocklath *and stapling to the* Rocklath.

I. SCOPE

Unless otherwise indicated, all walls, partitions and ceilings are included.

II. GENERAL CONDITIONS

In cold weather, building should be glazed and heated before lathing.

III. MATERIALS

A. Gypsum Lath—Shall be Rocklath Plaster Base manufactured by United States Gypsum Company in the following types and sizes as required:

1. (Plain) (Perforated) (Insulating Rocklath) (⅜″) (½″) thick by 16″x48″.

2. ½″ long length Rocklath ½″ thick, 24″ wide and ceiling high lengths, with "V" edges.

3. ⅜″ long length insulating Rocklath ⅜″ thick, 24″ wide, and ceiling high lengths, with square edges.

B. Cornerite—Shall be USG Cornerite

C. Corner Bead—Shall be USG
(1A Expanded Flange)
(4A Flexible Solid Flange Corner Bead)
(For ¾″ Bull Nose Bead specify either 10A Expanded Flange or 5A Short Flange)

D. Channels shall be USG ¾″ and 1½″ Cold Rolled Painted Channels.

E. Striplath shall be 3″ wide USG Striplath.

F. Resilient Clips—Shall be USG
(R-1—Resilient Clips for wood stud or joist framing)
(R-2)—Resilient Clips for corners and angles, wood frame construction)
(R-3—Resilient Clips of ¾″ channels, ceilings only)
(R-5—Resilient Clips for masonry construction)

G. BRIDJOINT Clips—Shall be USG
(B-1—Field clips for (⅜″) (½″) Rocklath plaster base)
(B-2—Corner clip for ⅜″ Rocklath only)

H. BRACE-TITE Clips—Shall be USG Brace-Tite Clips
(For ¾″ Channels)
(For Trussteel Studs)

I. Ceiling Runner—For 2″ lath and plaster partitions shall be USG L-shaped Ceiling Runner and ceiling runner clips for attaching long length Rocklath to ceiling construction.

J. Furring Brackets—Shall be USG Adjustable Wall Furring Brackets.

K. Bracing Clips—Shall be USG bracing clips for temporary bracing of solid Rocklath and plaster partitions.

L. Metal Studs—Shall be (2½″) (3¼″) (4″) (6″) Trussteel Studs, Runner Track and attachment shoes.

M. Metal Base—Shall be USG 2½″ high flush metal base with double, single, masonry and stud clips as required.

N. Lath Nails—Shall be 1⅛″ (1¼″ for ½″ Rocklath), 13 gauge, blued, 19/64″ flat head, smooth diamond point nails.

O. Staples—For attachment of Cornerite, Corner Bead and Striplath shall be gummed finish steel having 9/16″ legs and designed for mechanical driving.

P. Hangers—Shall be 8 gauge galvanized annealed wire.

Q. Tie Wire—Shall be 16 gauge and 18 gauge galvanized annealed wire as hereafter specified.

R. Tie-In Shoes—Shall be 12″ lengths of Cornerite or L-type ceiling runner.

IV. GROUNDS

Shall be set to provide the following minimum plaster thickness over the Rocklath plaster base:

a) ½″ on wood frame or metal stud.
b) ¾″ each face on 2″ Rocklath and plaster partition system.
c) (½″) (⅝″) on Brace-Tite lathing system.
d) ¾″ on long length Rocklath exterior wall furring system.
e) (½″) (⅝″) (1″) (1¾″) for Rocklath column fireproofing.

V. ERECTION

A. Nail-On to Wood Framing Member:

Rocklath plaster base shall be applied face out with the long dimension at right angles to the framing members. The end joints shall be made to fall on different supports in alternate courses, or the Rocklath shall be erected so that the end joints are continuous on a support. In the latter case the continuous joints shall be covered with 3-inch striplath and the long or edge joints shall be offset or staggered. In all cases, Rocklath joints shall be butted together. Space nails approximately ⅜″ from edges and approximately 5″ apart, using four nails per lath per support. (For ½″ Rocklath with supports more than 16″ o.c. nails must be spaced approximately 4″ apart using 5 nails per lath per support.) Cut accurately and fit Rocklath plaster base neatly around all electrical outlets, etc. All internal angles shall be reinforced with cornerite over the Rocklath, and all exterior angles shall be reinforced with corner bead secured to the Rocklath by stapling.

GYPSUM LATHING SPECIFICATIONS—CONT.

B. BRIDJOINT Lathing System

1. For Wood Framing—Rocklath shall be nailed to the framing members in such a manner that the end joints of the lath (16″ dimension) do not fall on framing members. End joints shall be secured to adjacent lath by use of a B-1 Bridjoint Field Clip at each corner to each lath. The internal corners of lath may be secured to each other by the use of B-2 Bridjoint corner clips. Do not nail Rocklath to framing members in the angles. In lieu of B-2 clips, Cornerite may be stapled to the Rocklath. Corner Bead shall be applied to all exterior angles by stapling to Rocklath plaster base.

2. For Nailable Steel Framing—Rocklath shall be nailed to the framing members, using a nail with a ⅜″ head and of sufficient length of lock in the nail retention curve or as recommended by the manufacturer of the framing member, in such a manner that the end joints of the lath (16″ dimension) do not fall on the framing members. End joints shall be secured to adjacent lath by use of B-1 clips at each lath corner. Nail Rocklath to framing members in the angles. Cornerite shall be applied to interior angles and corner bead to exterior angles by stapling to the Rocklath.

C. Resilient Lathing System

Rocklath plaster base shall be applied face out with the long dimension at right angles to the framing members and with end joints staggered and over framing members. Rocklath shall be attached to the framing members by means of R-1 Resilient Clips nailed to framing and placed at every intersection of Rocklath edges with framing members, and at corners with R-2 Resilient Clips so that the Rocklath is secured by the clips spaced 16″ o.c. in both directions. Corner Beads shall be stapled to Rocklath. Under no circumstances shall Rocklath plaster base be attached directly to the framing.

For resilient ceiling attachment with nail-on side wall, shim the perimeter of the ceiling with a 2″ strip of ⅜″ Rocklath nailed to joists, place a B-2 Bridjoint Corner Clip on top course of wall. Rocklath and nail bottom third of lath course only. Insert ceiling Rocklath into B-2 clip at the angle and attach resilient clips to other edge and proceed with resilient application on ceiling.

D. Resilient Lathing System for Masonry

R-5 Resilient Clips shall be used for the attachment of Rocklath to masonry walls by placing the clips not over 16″ o.c. along the long edge of the lath placed horizontally with a clip bridging the end joints which shall be staggered in alternate courses, and each clip shall be anchored to the masonry wall after it is placed by nailing with 10d cut nails driven into the mortar joints or into the solid sections of concrete block and gypsum tile or toggle bolted into hollow sections of such units.

E. Grillage for Suspended Ceilings

Hangers shall be placed not over 3′0″ o.c. in main runner direction and not over 4′0″ o.c. in opposite direction and 6″ from boundary walls or beams, and be of sufficient length to provide proper saddle tie to main runners. 1½″ cold rolled main runners shall be installed not over 4′0″ o.c., properly leveled at designated height and with hangers saddle tied not over 3′0″ o.c., and channel ends spliced not less than 12″ with a double strand of tie wire near each end of splice. ¾″ cold rolled channel cross furring shall be saddle tied (12″) (16″) o.c. and 2″ from parallel walls, beams and troffers, to the main runners with double strand of 16 gauge tie wire. Channel ends shall be lapped 8″ and tied near each end of splice with double strand of tie wire. The channel ends must extend to the plane of the abutting side wall and top flange of channel end bent up.

F. Grillage for Furred Ceilings

¾″ cold rolled channels shall be saddle tied to steel joists (12″) (16″) o.c. and 2″ from parallel walls, beams or troffers with double strand of 16 gauge tie wire. Channel ends shall be lapped 8″ and tied near each end of splice. The channel ends must extend to the plane of the abutting side wall and top flange of channel end bent up.

G. BRACE-TITE Lathing System for Plaster

Place a Brace-Tite starter clip over the end of the ¾″ channel at the point where it meets the starting wall. Rocklath Plaster Base shall be applied with the long dimension at right angles to the ¾″ channels. Rocklath shall rest on top of the starter clip loops, and shall be fastened to each channel with a Brace-Tite field clip. Rocklath end joints shall fall between channels and shall be secured with USG B-1 Bridjoint field clips on both sides. Succeeding courses of Rocklath Plaster Base shall be attached with Brace-Tite field clips hooked over the channel and fastened into the eyes of the preceding clips. End joints of Rocklath, in adjacent courses, shall be staggered. The last course of Rocklath shall be cut to the width required to fill the remaining space. The Brace-Tite field clip used for this final course shall be inserted over preceding clip, pulled tight into eye and excess length cut off.

Where ¾″ channel runs are interrupted by light troffers, grilles, etc., Brace-Tite starter clips shall be used to start a new course of Rocklath. For these locations, the extended leg of the starter clip shall be cut off so as not to protrude below the brown coat of plaster.

Angles between the ceiling and all vertical planes shall be reinforced over the Rocklath Plaster Base with USG Cornerite stapled to the Rocklath.

(For 2 or 3 hour fire rating) Lengths of 14 gauge wires shall be run diagonally across ceiling through the Brace-Tite clip loops.

H. BRACE-TITE Lathing System for Adhesive Applicator of Acoustical Tile. Place the full loop end of a Brace-Tite Acoustical Clip over the end of each of the ¾″ channels at the point where it meets the starting wall. Rocklath Plaster Base shall be applied with the long dimension at right angles to the ¾″ channels. Rocklath shall rest on top of the Brace-Tite Acoustical Clip and the half loop end snapped over the ¾″ channel to secure the lath tight against the channel.

Rocklath end joints shall fall between channels and shall be secured with Bridjoint Clips on both sides. Succeeding courses of Rocklath Plaster Base shall be attached with Brace-Tite Acoustical Clips hooked over the channel behind the loop of the previous BT-A Clip and carried across the Rocklath face snapping the half loop end over the channel. End joints of the Rocklath shall be staggered in adjacent courses.

The last course of Rocklath shall be cut to the width required to fill the remaining space. The Brace-Tite Acoustical Clip shall be hooked over the ¾″ channel where it meets the end wall, cut off approximately 2″ longer than the piece of Rocklath it is supporting, and wire tied to the ¾″ channel

GYPSUM LATHING SPECIFICATIONS—CONT.

with loop of 18 gauge tie wire. The last course of Rocklath may be applied either at the end wall or in the field of the ceiling.

Where ¾″ channel runs are interrupted by light troffers, grilles, etc., the Rocklath shall be cut as required and the clip bent over the channel and excess length cut off or the Rocklath installed in a similar manner as specified for application of the last course of Rocklath plaster base.

I. Resilient Lathing System for Suspended Ceilings

R-3 Resilient Clips shall be used for the attachment of Rocklath to ¾″ cold rolled ceiling channels spaced 16″ o.c. by placing the lath at right angles to the channels, hooking the clips over the top flange of the channel and inserting the lath edge into the prongs of the clip. End joints shall fall under the channels and shall be staggered in alternate courses.

J. BRACE-TITE TRUSSTEEL Stud ROCKLATH Partition

Trussteel stud runner tracks shall be aligned accurately according to partition layout and securely attached to floor and ceiling construction. Studs shall be erected not to exceed 16″ o.c., secured to floor and ceiling runner track with attachment shoes, wire tied around studs with a double strand of 18 gauge tie wire. Studs shall be located approximately 1½″ from abutting partitions or wall constructions and at all openings. Securely wire tie door buck anchors to the adjacent studs. Corners shall be framed with studs located 1½″ from each side of the internal angle.

Rocklath shall be securely attached to the Trussteel Studs using Brace-Tite BT-2 starter and field clips, with the long dimension of the lath at right angles to the studs. Abutting end joints shall occur between studs and shall be staggered in alternate courses. Secure ends to adjacent lath with B-1 Bridjoint Clips. The bottom course of lath shall be cut to height as required, secured to preceding course with B-1 Bridjoint Clips in each stud space and wire tied to studs (as required by base or ground used).

Cornerite shall be installed on all internal angles and corner bead on external angles by stapling to the Rocklath Plaster Base.

USG 2½″ metal base shall be attached to stud base clip which are wire tied over the Rocklath to the studs.

Where portland cement or terrazzo base is specified, USG 7-A base screed shall be wire tied over the Rocklath at indicated height and 2.5 lb. Diamond Mesh Striplath stapled to Rocklath to receive portland cement or terrazzo.

Where wood base is specified, ½″x2½″ wood grounds shall be wire tied over the Rocklath to the studs.

Where asphalt or rubber base cemented to plaster is specified, a plaster ground of (½″x1″ wood) (6A base screed) shall be wire tied over Rocklath to studs.

NOTES: RELATED INCLUSIONS

Door Bucks:

1. Under appropriate section specify steel bucks to be anchored to the structural construction above with struts of not less than 1½″ o.d. pipe or 14 gauge 1½″ box channels and with jamb anchors provided approximately 12″ from top and bottom and at mid-point of height.

2. If wood door bucks are to be used, under appropriate section, specify rough bucks at same width as studs and of not less than 1⅝″ stock, with jambs running to underside of structural construction above and well anchored at top and bottom.

K. 2″ Solid ROCKLATH and Plaster Partition

Metal Base shall be attached to rough floor by nailing clips not over 24″ o.c. according to partition layout. Snap side plates over clips, cutting and bending at corners as required. (If wood floor runner is used, specify in carpentry section.)

Ceiling Runner shall be properly aligned over floor runner and securely attached.

Tie-In Shoes shall be attached to exterior walls, columns, abutting partitions, etc., by nailing, wire tying or stapling, as required, at third points of partition height.

Rocklath Plaster Base shall be cut in lengths to allow ¼″ minimum and 1¼″ maximum top clearance in the ceiling runner. The Rocklath shall be erected vertically, engaging the bottom in the groove of floor runner and either tying or clipping top to ceiling runner. Vertical edges of Rocklath shall be kept as plumb as possible and the V-joint edges be brought into intimate contact one with the other. No vertical cut edges of lath shall be used in the central portion of partition. The use of lath having cut edges shall be confined to the ends of the partition or at door bucks. Rocklath shall be neatly cut for electrical conduit, other piping or door struts, and one side shall be covered with metal lath backed with paper fastened to the Rocklath. Where Rocklath Plaster Base intersects other partitions, exterior walls or columns, it shall be wire tied or fastened to tie-in shoes at the third point of height.

For partitions not over 9′0″ in height, bracing shall consist of ¾″ cold rolled channels erected horizontally, with flanges turned down, just below mid-point of height. The bracing member shall extend the full length of the partition and shall be fastened to the lath by the use of tie wires looped over the channel, or USG wire bracing clip, at center of the lath in such a manner as to keep the lath joints together as well as securing the channels to the lath. It shall be similarly wire tied or clipped to the lath at channel ends.

For partitions over 6′0″ in length, the horizontal braces shall be reinforced by vertical struts every 6′0″ or fraction thereof formed from 1½″x1½″ angles (or heavier materials) fastened securely at the bottom and wedged firmly against the construction at the head. Vertical struts shall be securely wire tied to horizontal braces.

For partitions over 9′0″ in height, two horizontal braces at third points shall be used. Attach to lath in a similar manner.

Seasoned wood bracing members may be used in lieu of metal bracing, provided they are attached in a similar manner to hold lath rigid during initial plastering stages.

Pipe chase hollow partitions shall be constructed using two ceiling runners and two floor runners, erected to provide hollow space indicated on the plans. To tie-in shoes erected on the abutting partitions at the third point of height and vertical ¾″ channels, not over 4′6″ on center, ¾″ channel shall be erected horizontally at the third points of height and cross braced not over 30″ on center with channel brackets wire tied to horizontal channels. Long length Rocklath, ½″ thick and V-edge, shall be set in floor runner, clipped or wire tied to ceiling runner, and wire tied over a nail to each intermediate horizontal channel.

GYPSUM LATHING SPECIFICATIONS

NOTES: RELATED INCLUSIONS

Door Bucks:—*Shall be as specified elsewhere. Wood bucks shall be milled according to details, of select stock, resistant to splitting and prime coated if stop is integral with the buck. Wood floor runner may be used as rough buck if separate jamb plus casing is to be used. After* Rocklath *Plaster Base is set in the groove, 8d coated nails shall be driven in at a 45° angle each side, approximately 12″ o.c., and bent over against the lath for subsequent anchorage in the plaster. Separate bracing is required to keep buck in alignment with partition and, in addition, a door templet will be required when integral finish buck is used.*

Steel bucks shall be furnished with clip inserts for centering Rocklath *in partition. If door buck struts are furnished, they shall not exceed ⅝″ in size in direction of partition thickness.*

Fixture Attachment—*Lightweight fixtures and trim shall be installed by drilling, set dry plaster to a minimum depth of ¾″ and inserting a plastic plug for anchorage of attachment screws.*

Cabinet and shelving grounds shall consist of ¾″ (actual dimension) by 1½″ wood strips, having 6d (minimum) coated nails driven ⅝″ into both edges at not over 12″ o.c., attached to the Rocklath *by nailing, wire tying or bolting.*

Lavatory and sink hangers on 2″ solid partitions shall be installed by wire tying an 18 gauge perforated plate of size equal to hanger (maximum 6″x24″) to opposite side of the lath and placing hanger bolts prior to plastering.

Ceramic Tile—*(Where ceramic tile is required over* Rocklath, *diamond mesh metal lath shall be stapled over the* Rocklath *plaster base with staples spaced approximately 8″ on center, horizontally and vertically, and portland cement-lime plaster shall be applied in scratch and brown coats to ⅝″ grounds over lath as a base for the ceramic tile) or (Ceramic tile shall be adhesively attached over the finished gypsum plaster in accordance with adhesive manufacturer's specifications.)*

Electrical Work—*Electrical conduit and outlet boxes shall be specified elsewhere. Embedded conduit size shall not exceed ½″ rigid. Switch boxes and convenience outlet boxes shall not exceed 1½″ in depth and, if plaster ring is used on 4″x4″ convenience outlet boxes opening one side only, the box shall not exceed 1¼″ in depth, to provide ½″ of plaster on the back side.*

L. Exterior Wall Furring System

Single Metal Base shall be attached to rough floor by nailing clips not over 24″ on center. Snap the side plate over the clips, cutting and bending at corners as required. (Alternate: Wood runner shall be attached to the rough floor by nailing with cut nails or concrete stub nails in the center groove or through alternate outside edges not over 16″ on center.)

Attach ceiling runner to the construction above as required, locating it by plumbing up from the floor runner, or install furring channel 6″ from top as specified below.

Attach furring brackets to the masonry walls not over 4″ from columns or other abutting construction and not over 36″ on center horizontally and vertically, and as required above and below windows, using (one 2″ cut nail in mortar joints of brick, clay tile, or cement block or in the field of lightweight aggregate blocks) (⅝″ concrete stub nails or power driven nails or other suitable fasteners in monolithic concrete). Fastenings shall be driven through top hole of bracket. Furring channels shall be laid horizontally on the furring brackets with the legs down, plumbed to a line with the ceiling runner and base, and wire tied to the bracket with a double strand of 18 gauge tie wire. Excess bracket length shall be bent down.

The gypsum lath shall be applied with the long length vertical, butted lightly, with the foil facing the furred space, by setting bottom of lath in the groove of the base grout, clipping top of lath to the ceiling runner and wire tying over a nail at the edges to intermediate horizontal channel furring. Cut and fit gypsum lath to allow slight clearance around window frames. Apply a 3″ strip of metal lath over each Rocklath joint over and under windows.

M. ROCKLATH and Plaster Column Fireproofing

(*Note to Architect:* *For 1, 1½, 2 or 3 hour fire rating, use following lathing specification.)*

Apply ⅜″x16″x48″ Perforated Rocklath vertically against the column flanges and bridging the web spaces, cut as required, fastened with double strands of 18 gauge galvanized tie wire located approximately 2″ from ends of the lath and about 15″ on center at intermediate points and wrapped around the perimeter of the column. USG 1A Expanded Flange Corner Bead shall be set at each corner to establish (½″) (⅝″) (1″) (1¾″) plaster thickness over the Rocklath by wire tying to the double strands of 18 gauge wire.

Note to Architect: *For 4 hour Fire Rating, use following lathing specification:*

Apply a double thickness of ½″x24″ long length Rocklath vertically against the column flanges and bridging the web spaces, cut as required, and fastened with a double strand of 18 gauge galvanized tie wire located about 4″ from top and bottom, and 24″ on center at intermediate points and wrapped around perimeter of column. One inch hexagonal 20 gauge galvanized wire fabric shall be wrapped tightly around the column over the Rocklath. USG 1A Expanded Flange Corner Bead shall be wire tied to each corner to provide 1″ plaster ground over the Rocklath Plaster Base.

USG COLOR-RITE METAL LATH

DESCRIPTION

Metal lath is sheet steel that has been slit and expanded to form a multitude of small mesh openings.

It is made from rust-resisting copper alloy steel and is further protected by dipping the expanded sheet into black asphaltum paint. (Exception: 3.4 lb. diamond mesh when made from galvanized sheets.) For sizes and weights—See Technical Data page 21.

USG COLOR-RITE METAL LATH represents the newest development in the metal lath industry. Ends of bundles are spray painted ***red*** for all 3.4 lb. lath, ***white*** for 2.5 lb. diamond mesh and 2.75 lb. Z-rib, ***blue*** for 4.0 lb. ⅜″ riblath. This makes warehousing, inventory and job distribution easier and **positive.** An architect may quickly and **visually** inspect a job to make sure the weight lath he specified is used.

FUNCTION AND UTILITY

Metal lath is used as a plaster base and as centering for concrete.

Fire Resistant—Metal lath and gypsum plaster provide the fire ratings shown on page 24.

Strength and Reinforcing—Metal lath embedded within the plaster thickness provides tensile strength in a manner similar to steel reinforcement in concrete slabs, thus providing unusually high resistance to transverse impact. It decreases the hazards of cracks and failures due to structural movement of the frame.

Flexible—Metal lath is readily shaped to ornamental contours to a degree not possible with other plaster bases.

Quality Plastering—The use of metal lath as a plaster base is conducive to good plastering because it makes the use of oversanded plaster in the scratch coat and under thickness work impractical.

Long Range Economy—Metal lath is intended for highest quality, fire resistant, durable plastering with low maintenance costs.

LIMITATIONS OF USE

1. The minimum weights of lath for spacing of supports listed in Technical Data must be observed.
2. The securing of metal lath to supports should be in accordance with the specifications printed herein.
3. If sand is used for plastering, it must be clean. Unwashed salt water sand should not be used.
4. When abnormally high humidity, moisture, acid fumes or unusual job conditions are anticipated, refer to USG Architect Service representative.
5. When contact, furred or suspended ceilings are used under roof construction, the enclosed space thus established shall be vented in accordance with good engineering practice.

CAUTION—Failure to observe these limitations may result in failure.

USG METAL LATH TYPES

USG COLOR-RITE DIAMOND MESH LATH

A small mesh (approximately 11,000 meshes per yard) diamond pattern metal plastering base.

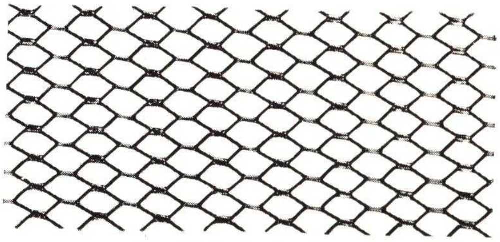
A general all-purpose lath. Best for ornamental, contour plastering. The small meshes conserve plaster and reduce droppings. Nationally available. Also available in self-furring type having ⅜″ "dimple" indentations spaced 1½″ o.c. each way for use as exterior stucco base and for fireproofing columns.

Size: 27″ x 96″.

Weights: 2.5 lbs. ***(End Painted White)*** and 3.4 lbs. ***(End Painted Red)*** per square yard.

Limitations of Use

Expanded Metal Stuccomesh is preferred as a stucco base.



USG Diamond Mesh Lath

USG COLOR-RITE ⅛″ RIBLATH (Flat Riblath)

A herringbone mesh pattern, with ⅛″ deep Z-shaped ribs running lengthwise of the sheet at 1½″ intervals.

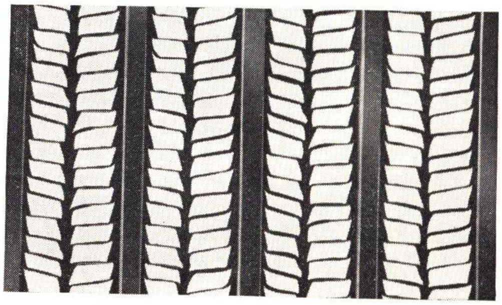
Stiffening ribs and herringbone pattern increase rigidity, thus permitting a wider spacing of supports or a saving in the weight of lath required. Particularly suitable for attachment by nailing. Its unusual rigidity permits the application of basecoat plaster, scratch and brown coats, in a "double-up" operation. Small meshes conserve plaster materials.

Size: 24″ x96″.

Weights: 2.75 lbs. ***(End Painted White)*** and 3 4 lbs. ***(End Painted Red)*** per square yard.

Limitations of Use

Its rigidity makes it unsuitable for contour plastering. Use Diamond Mesh lath.



USG ⅛″ Riblath

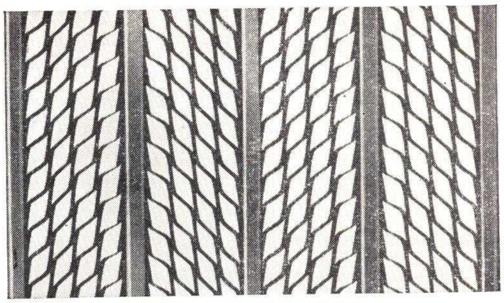
USG COLOR-RITE METAL LATH TYPES (Cont'd)

USG COLOR-RITE 4-MESH Z-RIBLATH

A "flat rib" type of lath with smaller mesh openings. Suitable for "double-up" type of plasterings. An excellent nail-on lath, or for tie-on work on flat ceilings.
Size: 27″ x 96″.
Weights: 2.75 lbs. ***(End Painted White)*** and 3.4 lbs. ***(End Painted Red)*** per sq. yd.

Limitations of Use

Use Diamond Mesh lath for contour plastering.



USG 4-Mesh Z-Riblath

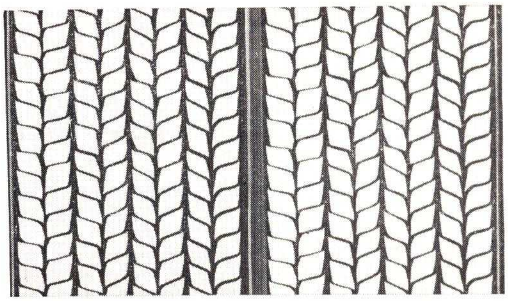
USG COLOR-RITE ⅜″ RIBLATH

A herringbone pattern mesh with ⅜″ V-shaped ribs running lengthwise of the sheet at 8″ intervals, with inverted intermediate ⅛″ ribs.

The heavy ribs provide exceptional rigidity. Used when supports are spaced more than 16″ o.c. and not more than 24″ o.c. and for 2″ solid studless metal lath and plaster partitions. Used as a centering for concrete floor and roof slabs. See Technical Data.

Size: 24″ x 96″. (Up to 100″ on special order)

Weights: 3.4 lbs. ***(End Painted Red)*** and 4.0 lbs. ***(End Painted Blue)*** per square yard.



USG ⅜″ Riblath

Limitations of Use

Its extreme rigidity makes ⅜″ Riblath unsuitable for contour plastering. Use Diamond Mesh Lath.

Due to ⅜″ rib, minimum ground thickness must be 1″.

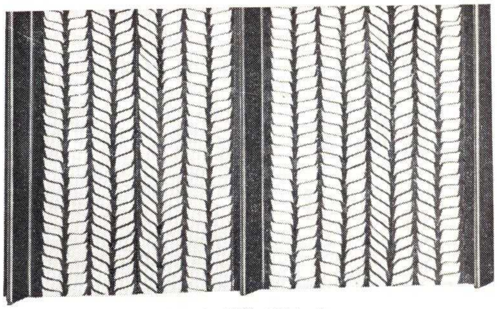
USG ¾″ RIBLATH

A herringbone pattern mesh with ¾″ deep V-shaped ribs lengthwise of the lath at 4″ intervals.

A structural lath, providing the dual functions of centering and reinforcement for concrete floor and roof slabs. (See Data on page 24.)

Sizes: 2′ x 8′, 2′ x 10′ and 2′ x 12′.

Weights: .60 lb. and .75 lb. per square foot.



USG ¾″ Riblath

Limitations of Use

Not recommended as a plastering lath.

USG EXPANDED METAL STUCCOMESH

A 1⅜″ x3⅛″ diamond pattern mesh made of copper alloy steel, asphaltum painted. Designed as a base for exterior stucco, hand or pump applied.

Limitations of Use

Should not be applied without using 1½″ galvanized furring nails.

When used over sheathing other than wood, fasten with longer nails, providing a minimum penetration of 1⅛″ into studs.

USG Expanded Metal STUCCOMESH

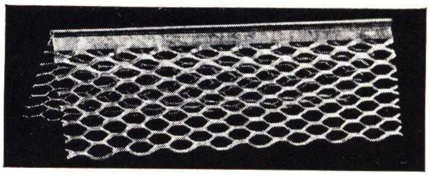
USG LATHING ACCESSORIES

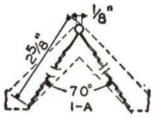
USG CORNER BEADS

USG corner beads should be used on all external plaster angles to provide: (1) plaster protection, (2) true and straight lines at angles and (3) grounds for plastering.
Lengths: 8′, 9′, 10′ and 12′. Gauge of Steel: 26 gauge galvanized.

1-A EXPANDED CORNER BEAD

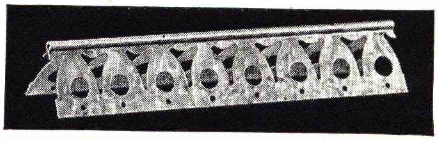
Its wide expanded flanges are easily flexed. Preferred for irregular corners. Provides increased reinforcement close to nose of bead.

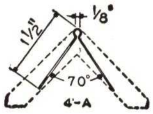




4-A FLEXIBLE CORNER BEAD

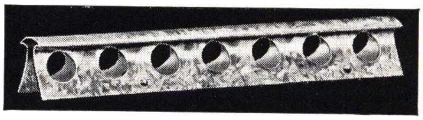
The general purpose corner bead. Economical and most generally used. By snipping flanges, this bead may be bent to any curved design (for archways, telephone niches, etc.). Can be secured to corners with 9-A Corner Bead clip attached to flanges.

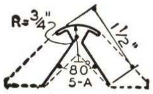




5-A BULL NOSE CORNER BEAD

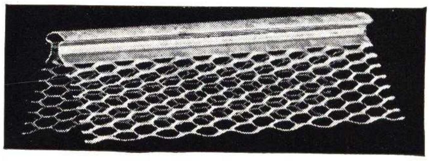
A ¾″ radius bull nose bead with short flange. Used for rounded corners. Can be secured with No. 9-A Corner Bead Clips attached to flanges, where wide nailing flanges are required.

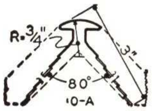




10-A EXPANDED BULL NOSE CORNER BEAD

A bull nose bead similar to above, but with 2½″ wide expanded flanges. Especially suitable on irregular corners.



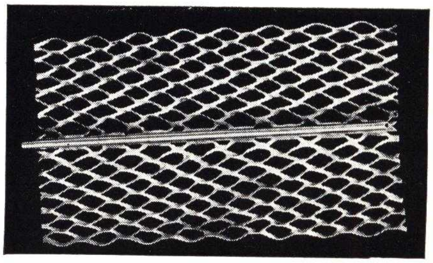


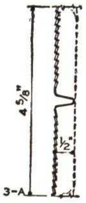
USG SCREEDS

USG Screeds are used to divide different types of plaster finishes and as a separation between plaster and a cement or terrazzo base. Lengths: 10′ 0″. Gauge of steel: 26-gauge galvanized steel.

3-A EXPANDED BASE SCREED

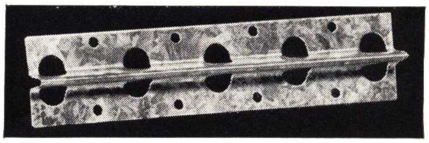
A flush type ½″ ground (job shimmed for ¾″ grounds) with wide flexible expanded flanges for added reinforcement or for attachment to uneven surfaces. Used as a dividing point between plastered surfaces and cement in terrazzo.

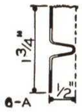




6-A PLAIN BASE SCREED

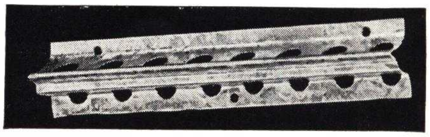
A flush type ½″ ground (job shimmed for ¾″ grounds), used at the juncture of differing finishes; as between plaster and terrazzo surfaces.

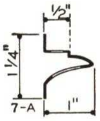




7-A CURVED POINT BASE SCREED

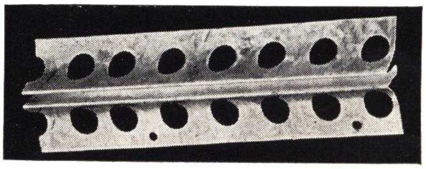
Use where base or wainscot projects beyond plastered surface. For ½″ plaster ground (job shimmed for ¾″ grounds) and ½″ projection.

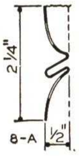




8-A PICTURE MOULD

A concealed mould. Attached to lath and plastered flush to the notch opening. Grounds ½″ (job shimmed for ¾″ grounds).





USG LATHING ACCESSORIES (Cont'd)

USG CASING BEADS

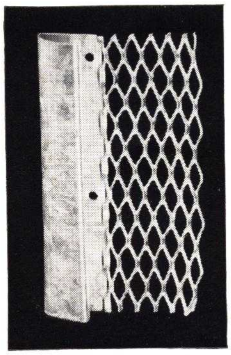
USG Casing Beads are used as a plaster stop and trim around window and door openings.

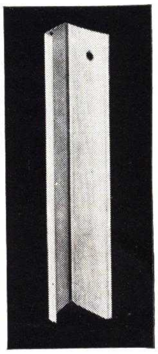
Casing Bead	Style	Flange	Gauge	Grounds
4	Quarter Rd.	Expanded	24	(½″, ¾)
138	Quarter Rd.	Short	24	(½″, ¾, ⅞)
60	Semi-Square	Expanded	24	(½″, ¾)
		Short	22	(½″, ¾, ⅞)
66	Square	Expanded	24	(½″, ¾)
		Short	22	(½″, ¾, ⅞)

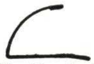
All casings are furnished in 7′, 8′ and 10′ lengths of galvanized steel for use with metal lath, ROCKLATH or masonry construction. *Caution*—In order to insure proper grounds for plastering, ¾″ casing beads are recommended for use in conjunction with metal lath, clay tile on brick: ⅞″ casing beads are recommended *when the flange is applied under* ROCKLATH plaster base.

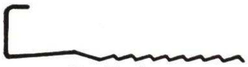
½″ casing beads are recommended over PYROBAR* and *when flange is applied over* ROCKLATH.

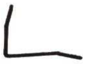
METAL DOOR AND WINDOW CASING BEADS


No. 4—Expanded flange


No. 66—Short flange

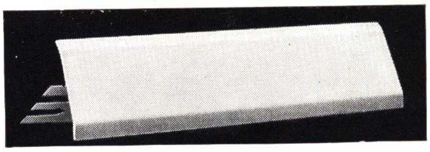

No. 138—Quarter Round Short flange type)

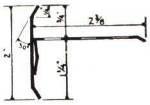

No. 66—Square (Expanded flange type)


No. 60—Semi-Square (Short flange type)

USG 2″ PARTITION TERMINAL

A Partition Terminal for use as a partition cap and plaster ground or to form arched openings in 2″ solid plaster partitions with either metal lath or ROCKLATH Plaster Base. Cap is formed of 18-gauge steel, welded to 24-gauge punched runner —assembly prime coated. Standard length 8′2″.



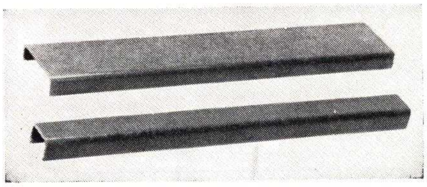


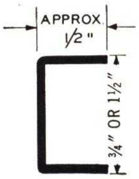
USG LATHING CHANNELS

USG Lathing Channels are cold rolled from 16-gauge steel, black asphaltum painted; used for furring, suspended ceilings, partitions, and ornamented lathing.

Lengths: 16′ or 20′

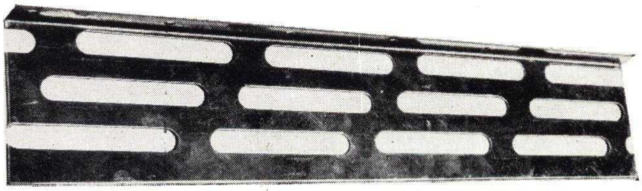
Weights: ¾″—300 lbs. per M Lin. Ft.
1½″—475 lbs. per M Lin. Ft.



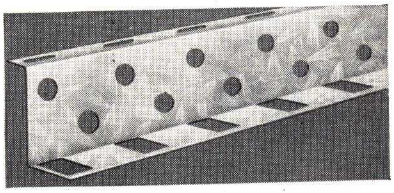


USG CEILING RUNNERS

L-Type—A specially designed ceiling runner providing top anchorage for studless metal lath or ROCKLATH solid plaster partitions.



Z-Type—A specially designed steel angle for fastening to the ceiling in order to provide positive anchorage and alignment of ¾″ channels in either solid partition construction or exterior wall furring.

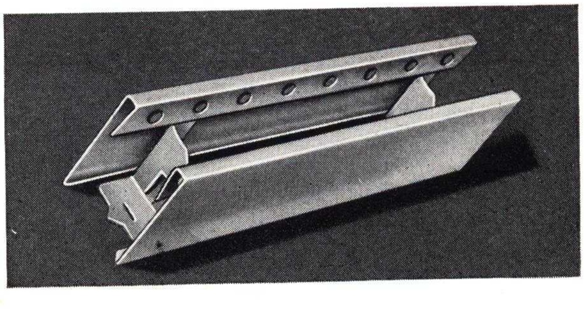


USG METAL BASE

A flush, clip-on metal base system consisting of a 2½″ high face plate formed from 18-gauge steel, primed with a rust inhibitive paint, adaptable to all plaster partitions or furred exterior walls by the use of specially formed steel clips.

The cross section as designed provides a strong, rugged base. Substantial installation economies effected by the feature mounting snap-on application to the double base clip used in "2" solid plaster partition or to the single base clip and stud base clip used with hollow partitions or furred walls.

The face plates are easily notched and bent to form inside and outside corners, and are butted and internally spliced for continuous runs uninterrupted from one type of wall construction to another.



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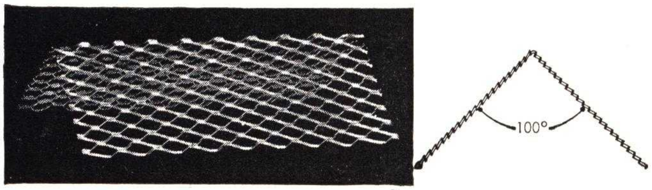
*Trademark Reg. U. S. Pat. Off.

USG LATHING ACCESSORIES (Cont'd)

USG SELV-EDGE CORNERITE AND STRIPLATH

Cornerite is a strip of copper alloy, painted, Diamond Mesh lath, bent lengthwise in the center, to form a 100° angle, length 96″. Cornerite should be used on all internal plaster angles as corner reinforcement where metal lath is not lapped or carried around corners; over non-ferrous lath anchored to the lath; over corners of masonry constructions. (Cornerite is optional in Resilient, Bridjoint* lathing system. If used, it is secured to the lath, not the supports.)

Striplath is a strip of 2.5 lb. Diamond Mesh lath, copper alloy, painted, 96″ long—used as a plaster reinforcement over joints of non-metallic lathing bases.



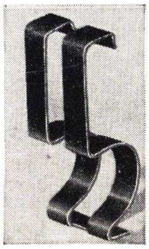
USG METAL LATH RESILIENT PLASTERING SYSTEM

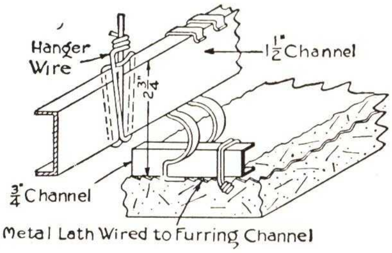
Specially formed steel clips to provide a non-rigid, or floating attachment of metal lath or channels to the structural frame; affording:

1. Increased protection against plaster cracking due to structural movement.
2. Increased sound transmission loss.

Resilient Clip No. 100

For suspended ceilings resiliently attaching ¾″ cold rolled furring channels ½″ below direct contact with the 1½″ cold rolled main runner channels.

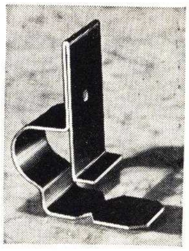


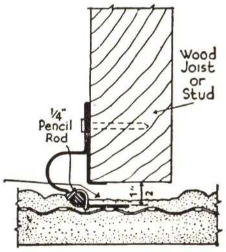


Resilient Clip No. 200

For wood studs or joists. Clips spaced not over 12″ o.c. for ceiling construction or 16″ o.c. for sidewalls.

Attached by nailing with 13-gauge, 1⅛″ lathing nails. Metal lath is floated ½ in. free of the framing members by wire tying to a ¼″ pencil rod, nested and tied to the inside of the tongue of the resilient clip.

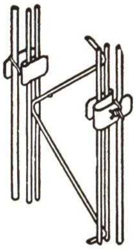




Resilient Clip No. 400

For Trussteel Studs. Snapped in place, 16″ o.c., over the outer flanges of the Trussteel studs.

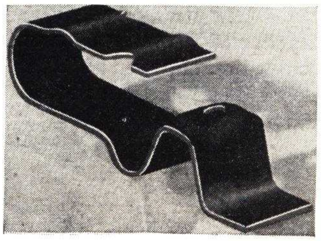
Metal lath is floated ½ in. free of the steel studs by wire tying to a ¼″ pencil rod nested and tied to the outside of the protruding tongue of the resilient clip.

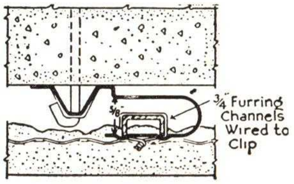


Resilient Clip No. 500

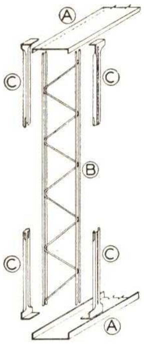
For masonry walls. Nailed in place over Pyrobar, or light weight aggregate concrete units, using 2″ staples or 10d cut nails driven into the mortar joints or solid sections of the units. Attached similarly to clay tile or brick by driving 10d cut nail into the mortar joint. Metal lath is resiliently furred out ⅞″ from the face of masonry by wire tying to ¾″ cold rolled channels heated and tied inside the protruding tongue of the resilient clip.

Spacing of Furring Channels—12″, 16″, 19″, 24″
Spacing of No. 500 Clips—24″, 18″, 15″, 12″





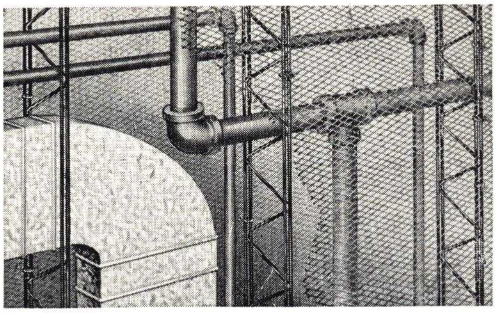
USG TRUSSTEEL* STUDS



DESCRIPTION

This is a truss design stud for the erection of hollow non-load bearing fireproof partitions. Outer chords and diagonal struts are constructed of round rods. As shown in the sketch, the component parts are (A) 22 gauge top and bottom runner tracks, (B) double 7 gauge rod studs welded at all contact points, (C) attachment shoes for connecting the studs to the runners.

Sizes—Consult technical data below.



FUNCTION AND UTILITY

Flexibility—The stud construction by its open web design allows encasement of pipes, conduits, heat controls, oxygen tubes, and small ducts, horizontally and vertically without weakening the partition structurally by chasing. Diagonal struts are easily cut to accommodate larger pipes or ducts.

Light Weight—The finish partition weighs 11½ to 17 lbs. per sq. ft., depending on the type of lath and plaster used.

Fireproofing—Fire tests conducted at nationally recognized laboratories give fire ratings of 1 to 2 hours depending on type of lath and plaster used. (See technical data below)

Strength—Strength of studs is derived from strategic use of metal in a truss design—not on bulk weight. The partition assembly of studs, lath and plaster has more than adequate strength for building construction practices and is nationally accepted by building code authorities.

Economy—Material costs are low, job erection is fast and provides substantial installation economy for mechanical trades. (Partition assembly in materials and trade practices parallels standard wood stud construction but with incombustible materials.)

Adaptable—Provided in four stud widths, available for varying ceiling heights and for use with Resilient Clips where additional Sound Transmission Loss is required. Plaster base may be either metal lath or ROCKLATH.

LIMITATIONS

USG Trussteel Studs are designed for non-load bearing partitions only.

Stud spacing is determined by recommendation, for plaster base selected.

Partition height should not exceed maximum heights shown in Technical Data.

TRUSSTEEL STUDS TECHNICAL DATA

(All tests made by nationally recognized laboratories)

Stud Width	Finished Wall Thickness Normal Grounds: DiamondMesh ⅛″ Riblath	Finished Wall Thickness Normal Grounds: ⅜″ Riblath ROCKLATH	Maximum Partition Height
2½″	4″	4½″	14 Ft.
3¼″	4¾″	5¼″	16 Ft.
4″	5½″	6″	18 Ft.
6″	7½″	8″	20 Ft.

Stud Lengths: 7′ 0″ to 20′ 0″ in increments of 3″.
Runner Tracks: 2½″, 3¼″, 4″ and 6″ widths by 8′ 2″ long.

FIRE RATINGS AND SOUND TESTS

Partition Construction: Lath	Partition Construction: Plaster	Plaster Thickness	Fire Rating	Average Sound Transmission and Loss in Decibels
Metal Lath	Gypsum—Sand 1:2, 1:3	¾″	45 Min.	40.5 (1)
	Gypsum—Sand 1:2, 1:2	¾″	1 Hour	
	Gypsum—Wood Fiber	⅞″	2 Hour	
	Gypsum—Perlite 100:2, 100:3	1″	2 Hour	
Perforated ROCKLATH and BRACE-TITE	Gypsum—Sand 1-2, 1:2	½″	1 Hour	46.5
	Gypsum—Perlite 100:2½	½″	1 Hour	

RECOMMENDED STUD SPACING

Type of Lath	TRUSSTEEL Stud Spacing
2.5 lb. Diamond Mesh Lath	12 Inches
3.4 lb. Diamond Mesh Lath	16 Inches
2.75 lb. ⅛″ Riblath	16 Inches
⅜″ Plain or Perforated ROCKLATH	16 Inches
3.4 lb. ⅛″ Riblath	19 Inches
3.4 lb. ⅜″ Riblath	24 Inches
4.0 lb. ⅜″ Riblath	24 Inches

NOTES:—

(1) Average decibel transmission loss 54.7 when furred both sides with USG No. 400 Resilient Clips and Pencil Rods supporting metal lath and plaster.

*Trademark Reg. U. S. Pat. Off.

USG METAL LATH TECHNICAL DATA

TYPES AND WEIGHTS OF METAL LATH AND SPACING OF SUPPORTS

Type of Lath	Weight Per Square Yard	Type of Steel	Size Sheets	Maximum Allowable Spacings				
				Vertical Supports			Horizontal Supports	
				Wood	Metal		Wood or Concrete	Metal
					Solid Partitions	Others (5)		
Diamond Mesh	2.5 lb.	Copper Alloy (1)	27″x96″	16″	16″	12″	(4)	(4)
Diamond Mesh	3.4 lb.	Copper Alloy	27″x96″	16″	16″	16″	16″	13½″
Diamond Mesh	3.4 lb.	Galvanized (2)	27″x96″	16″	16″	16″	16″	13½″
⅛″ Z-Rib	2.75 lb.	Copper Alloy	27″x96″	16″	16″	16″	16″	12″
⅛″ Z-Rib	3.4 lb.	Copper Alloy	27″x96″	19″	24″	19″	19″	19″
⅜″ Rib	3.4 lb.	Copper Alloy	24″x96″	24″	24″	24″	24″	24″
⅜″ Rib	4.0 lb.	Copper Alloy	24″x96″	24″	24″	24″	24″	24″
STUCCOMESH (3)	1.8 lb.	Copper Alloy	48″x99″	16″ (3)				
STUCCOMESH	3.6 lb.	Copper Alloy	48″x99″	16″ (3)				
	Per Sq. Ft.							
¾″ Riblath	0.60 lb.	Copper Alloy	2′x8′					
	0.75 lb.	Copper Alloy	10′ & 12″	See table below for ¾″ Riblath, below				

All metal lath (except galvanized) is painted with a rust-inhibitive black asphaltum paint.

Notes (1) Copper alloy lath contains from 0.2% to 0.25% pure copper.
(2) Galvanized lath is cut from galvanized sheets.
(3) STUCCOMESH generally applied over exterior sheathing.
(4) Not recommended, except for fireproofing of steel shapes.
(5) Including vertical furring.

SIZE AND SPACING OF HANGERS FOR SUSPENDED CEILINGS

Maximum Ceiling Area Supported Per Hanger	Maximum Center to Center Spacing of Hangers	Minimum Size of W&M Gage Galvanized Wire	Alternate Types and Sizes of Hangers (1)
Up to 16 Sq. Ft.	4 Ft.	No. 8	3/16″ or ¼″ Round Mild Steel Rods or 1″x3/16″ Flat Mild Steel Bars

(1) Galvanized rods and rust inhibitive painted or galvanized straps recommended where severe moisture conditions may occur.

SIZE AND SPACING OF MAIN RUNNERS FOR SUSPENDED CEILINGS

Center to Center Spacing of Hangers	Size	Weight Per 1000 Feet	Maximum Spacing
Up to 3 Feet	1½″ Channel	475 Lbs.	4 Feet

SIZE AND SPACING OF FURRING MEMBERS

Center to Center Spacing of Supports	Size	Weight Per 1000 Feet	Maximum Spacing
3′-0″	¾″ Channel	300 lbs.	24″
3′-6″	¾″ Channel	300 lbs.	19″
4′-0″	¾″ Channel	300 lbs.	16″

LOADING TABLES FOR ⅜″ RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Lath (Lbs. Per Sq. Yd.)	SAFE SUPERIMPOSED LOADS IN LBS. PER SQ. FT. (Based on WL/8 and 16,000 lbs. Fibre Stress in Steel) SPAN IN INCHES			
			12	16	19	24
2″	24	3.4	950	536	380	238
		4.0	1090	613	433	271
2½″	30	3.4	1200	675	479	300
		4.0	1360	766	544	340
3″	36	3.4	1450	815	578	362
		4.0	1650	930	625	412

LOADING TABLES FOR ¾″ RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Slab† with ½″ P. C. Plaster on Underside	Wt. of Lath (Lbs. Per Sq. Ft.)	Stress in Concrete (Lbs. Per Sq. In.)	Max. Span for Wet Concrete†	SAFE SUPERIMPOSED LOADS IN LBS. PER SQ. FT. (Based on WL/10 and 16,000 lbs. Fibre Stress in Steel) SPAN IN FEET			
						3	4	5	6
2″	24	30	.60	600	3′ 3″	325	170	98	59
			.75	690	3′ 7″	438	233	138	87
2½″	30	36	.60	520	2′ 11″	422	222	129	78
			.75	620	3′ 3″	518	302	180	114
3″	36	42	.60	460	2′ 8″		273	160	98
			.75	550	2′ 11″		373	224	142
3½″	42	48	.60	420	2′ 5″		325	190	117
			.75	490	2′ 9″		442	267	170
4″	48	54	.60	390	2′ 3″		378	222	138
			.75	460	2′ 6″		514	310	198

USG METAL LATH TECHNICAL DATA (Cont'd)

FIRE TEST DATA

Panel Type

(All tests made by nationally recognized laboratories)

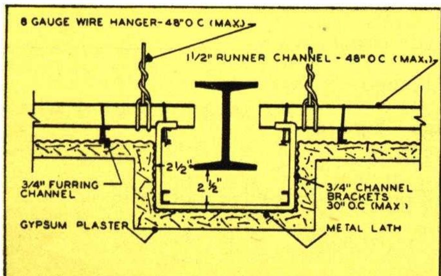
Construction	Type Base	Plaster and Aggregate	Thickness	Rating
		PARTITIONS		
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3 Gypsum-Sand, 1:2, 1:2 Gypsum-Sand, 1:2, 1:3 Gypsum Wood Fiber Gypsum-Vermiculite 100:2½, 100:3½	¾″ ¾″ ⅞″ ¾″ ¾″	45 Minutes 1 Hour 1 Hour 1½ Hour 1 Hour
Solid	Expanded Metal Lath	Gypsum Perlite 100:2½, 100:2½ Gypsum-Sand, 1:2, 1:2 Gypsum-Perlite 100:2, 100:3	1½″ 2″ 2½″	1 Hour 1 Hour 2 Hour
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3 Gypsum-Sand, 1:2, 1:2 Gypsum-Sand, 1:2, 1:3 Gypsum Wood Fiber Gypsum Perlite 100:2, 100:3	¾″ ¾″ ⅞″ ⅞″ 1″	45 Minutes 1 Hour 1 Hour 2 Hour 2 Hour
		CEILINGS		
Wood Frame	Expanded Metal Lath (A)	Gypsum Sand, 1:2, 1:3	¾″	1 Hour
Steel Joists (B)	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3 Gypsum-Vermiculite, 100:2, 100:3 Gypsum Wood Fiber Gypsum-Vermiculite, 100:2, 100:3	¾″ ¾″ 1″ 1″	2 Hour 3 Hour 3 Hour 4 Hour
Cellular Steel Floor (C)	Expanded Metal Lath	Gypsum Wood Fiber Gypsum-Perlite, 100:2, 100:3	1″ 1″	4 Hour 4 Hour
Cellular Steel Floor (D) Suspended Channel (E)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3 Gypsum-Vermiculite, 100:2, 100:3	1″ 1″	4 Hour 4 Hour
		COLUMNS		
Steel Section	Expanded Metal Lath (F)	Gypsum-Sand, 1:2, 1:3 Gypsum Perlite, 100:2, 100:3 Gypsum-Perlite 100:2, 100:3 Gypsum-Perlite 100:2, 100:3	¾″ 1″ 1⅜″ 1¾″	1 Hour 2 Hour 3 Hour 4 Hour

(A) Lath applied with 1½″ 11 gauge, 7/16″ head barbed roofing nails, 6″ o.c.
(B) 2½″ reinforced concrete slab on Riblath or 2″ precast gypsum tile above.
(C) Ceiling suspended 9″ or more below floor slab.
(D) Ceiling suspended 3″ or more below floor slab.
(E) Incombustible construction above.
(F) Self furring lath wrapped tight to column, or diamond mesh on channel framing.

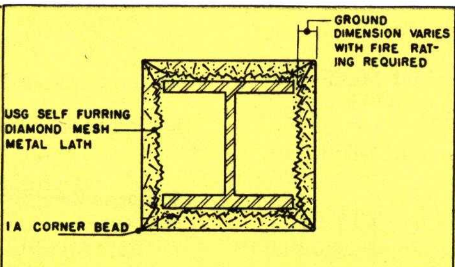
SOUND TRANSMISSION LOSS—PARTITIONS

2 x 4 wood studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides	38.7 decibels
2″ x 4″ wood studs; USG No. 200 Resilient Clips; Pencil Rods; Metal Lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.	52.0 decibels
2″ solid metal lath and gypsum plaster smooth white coat on both sides.	39.4 decibels
3¼″ TRUSSTEEL Studs; USG No. 400 Resilient Clips; Pencil Rods; Metal Lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.	54.7 decibels
3¼″ TRUSSTEEL Studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.	40.5 decibels

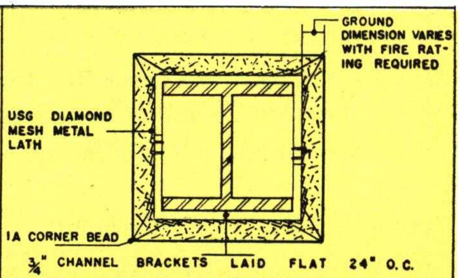
BEAM AND COLUMN FURRING DETAILS


8 GAUGE WIRE HANGER-48" O C (MAX)
1/2" RUNNER CHANNEL - 48" O C (MAX.)
2½"
2½"
3/4" FURRING CHANNEL
3/4" CHANNEL BRACKETS 30" O.C (MAX)
GYPSUM PLASTER
METAL LATH

BEAM & GIRDER FURRING


GROUND DIMENSION VARIES WITH FIRE RATING REQUIRED
USG SELF FURRING DIAMOND MESH METAL LATH
IA CORNER BEAD

COLUMN FURRING


GROUND DIMENSION VARIES WITH FIRE RATING REQUIRED
USG DIAMOND MESH METAL LATH
IA CORNER BEAD
¾" CHANNEL BRACKETS LAID FLAT 24" O.C.

ALTERNATE METHOD OF COLUMN FURRING

NOTE: FOR FIRE RATINGS, TYPE OF AGGREGATE, PROPORTIONS AND THICKNESS OF PLASTER SEE FIRE TEST DATA ABOVE

USG METAL LATH AND LATHING SPECIFICATIONS

NOTES TO ARCHITECT:

Paragraphs I, II, etc., are recommended as basic requirements for all metal lathing specifications. Paragraphs S-1, S-2, etc., apply to the erection of lath for various constructions and only those applicable to the job should be included.

Where reinforced concrete or concrete fireproofed structural steel framing is used, it is recommended that partitions be located so that at least a 1″ break in plaster face is provided on juncture of partitions with columns and/or beams, or that either of the following procedures can be employed:

1. Furring off the face of such members so that there is at least 1″ between back of metal lath and such faces.

2. By scatter nailing, 12″ o.c., No. 30 asphalt felt and the metal lath across the faces of such structural members.

I. SCOPE

Unless otherwise indicated, all lathing and furring shall be of metal, as herein described. (Or enumerate the areas.) Partitions shall be accurately located as shown on plans.

II. GENERAL CONDITIONS

In cold weather, buildings shall be glazed and heated before lathing.

III. MATERIALS

Unless specifically noted otherwise, all materials herein listed shall be protected by a coat of rust inhibitive paint after fabrication, bundled or packaged with positive identification.

A. Metal Lath—shall be USG Color-Rite metal lath, manufactured by the United States Gypsum Company, made from copper alloy steel sheets. Lath shall be colored to identify weight (red for 3.4, white for 2.5 diamond mesh and 2.75 flat Rib Lath: blue for 4.0 Rib Lath) and shall be provided in the following types and sizes:

(2.5 lbs.) (3.4 lbs.) USG Color-Rite Diamond Mesh Lath—size: 27″ x 96″.

(2.75 lbs.) (3.4 lbs.) USG Color-Rite ⅛″ Rib Lath (Flat Rib Lath)—size: 24″ x 96″.

(2.5 lbs.) (3.4 lbs.) USG Color-Rite Diamond Mesh—self-furring lath—size: 27″ x 96″.

(2.75 lbs.) (3.4 lbs.) USG Color-Rite 4-mesh Z-Rib Lath—size: 27″ x 96″.

(3.4 lbs.) (4.0 lbs.) USG Color-Rite ⅜″ Rib Lath—size: 24″ x 96″.

USG Expanded Metal Stucco Mesh—1⅜″ x 3⅛″ mesh.

B. Lathing Accessories

1. Channels shall be 16-gauge cold rolled steel channels, as manufactured by the United States Gypsum Company.

(a) ¾″, weighing not less than 300 lbs. per 1,000 lineal feet.

(b) 1½″, weighing not less than 475 lbs. per 1,000 lineal feet.

(c) Other

2. Pencil Rods for furring shall be not less than ¼″ in diameter and of mild steel.

3. Hangers shall be 8-gauge, galvanized annealed steel wire.

4. Tie Wire shall be 16-gauge and 18-gauge galvanized annealed steel wire, as specified herein.

5. Corner Bead—Shall be USG, as follows:

1-A Expanded Corner Bead
4-A Flexible Corner Bead
5-A Bull Nose Corner Bead
10-A Expanded Bull Nose Corner Bead

6. Corner Bead Clips—Shall be USG No. 9-A Corner Bead Clips—galvanized steel.

7. Base Screed—Shall be USG

3-A Expanded Base Screed
6-A Plain Base Screed
7-A Curve Point Base Screed
8-A Picture Mould

8. Casing Bead—Shall be USG

No. 4 Expanded Flange Quarter Round
No. 138 Short Flange Quarter Round
No. 60 Expanded Flange—Semi-Square
No. 60 Short Flange—Semi-Square
No. 66 Expanded Flange—Square
No. 66 Short Flange—Square

9. Cornerite—Shall be USG Selv-edge Cornerite, (2″ x 2″) (3″ x 3″).

10. Striplath—Shall be USG Selv-edge Striplath, (4″) (6″).

USG METAL LATH AND LATHING SPECIFICATIONS (Cont'd)

11. 2″ Partition Terminal—Shall be composed of a cap formed of 18-gauge steel, welded to 24-gauge punched runner and assembly, as manufactured by United States Gypsum Company.

12. Metal Studs—Shall be TRUSSTEEL studs, manufactured by United States Gypsum Company, formed with not less than 7-gauge wire. Stud sizes shall be as indicated on drawings or as follows: (2½″), (3¼″), (4″), (6″).

13. Ceiling Runner—As manufactured by United States Gypsum Company shall be:

L Type
Z Type

14. Metal Base—Shall be 2½″ high, face plate formed from 18-gauge steel, weighing not less than 600 lbs. per 1,000 lineal feet and as manufactured by the United States Gypsum Company complete with:

Splice plates
Single base clips for furred walls
Double base clips for 2″ solid partitions
Stud base clips for stud partitions
Masonry base clips for masonry walls

15. Metal Lath Resilient Clips—Shall be as manufactured by the United States Gypsum Company:

No. 100 for Suspended Ceilings
No. 400 for TRUSSTEEL Studs
No. 200 for Wood Studs and Joists
No. 400 for TRUSSTEEL Studs
No. 500 for Masonry walls

16. Wall Furring Brackets—Shall be USG galvanized steel adjustable wall furring brackets.

IV. GROUNDS

Unless otherwise specified, grounds shall be set to provide not less than ¾″ thickness of plaster measured from the flat portion of the back plane of the metal lath exclusive of ribs and be securely wire tied or nailed into place. (Note: Greater thicknesses are required for certain fire ratings.)

V. ERECTION OF METAL LATH

All metal lath shall be applied with the long dimension of the sheet across the supports. Rib lath shall be applied with the projections against the supports.

The ends of all lath shall be lapped not less than 1″. If end laps are made between supports, they shall be adequately laced or tied with No. 18-gauge tie wire. The sides of diamond mesh lath shall be lapped not less than ½″. The sides of rib lath shall be lapped by nesting outside ribs. Side laps shall be secured to every support unless otherwise specified, and shall be wire-tied between supports not to exceed 9″ intervals. All metal lath except ⅜″ riblath shall be started at one support away from the corner and be bent into the corner and carried on to the abutting wall. Where ⅜″ rib lath is used, it shall be butted into the corners and cornerite shall be applied over the abutting lath and wired at 6″ intervals along each edge in corners; cornerite shall be wire-tied along the edge only, not in the corner. All metal lath shall be placed so that the lower sheets overlap the upper sheets. Wherever possible, ends of lath in adjacent course shall be staggered.

Metal lath shall be secured to supports with 18 gauge tie wire at intervals not exceeding 6″. Ends of tie shall have three full twists, then bent up in the plane of the lath.

Corner Beads, Casing Beads, Base Screeds, Picture Molds, etc., shall be positioned by securely wiring to the metal lath at not more than 12″ intervals. Attachment to masonry or other solid construction shall be by nailing at intervals of not more than 12″. ½″ concrete stub nails shall be used for attachment to concrete.

VI. ERECTION OF GRILLAGES

A. Hangers shall be spaced not over 3′-0″ in the direction of the main runners and not over 4′-0″ in the direction at right angles to the main runners, and within 6″ of the ends of main runner runs and of boundary walls, girders or similar interruptions of ceiling continuity.

All hangers shall be of such lengths to (wrap around or be securely attached to steel beams or joists) (provide suitable anchorage in concrete by attachment to reinforcing steel, or by being looped and embedded 2″ in concrete) and to provide for full saddle tie to main runner at indicated height.

B. Main runners shall be placed not over 4′-0″ on center, properly positioned at indicated ceiling height, leveled and hanger saddle tied not over 3′-0″ on center along runner.

Main runners shall not be let into nor come in contact with abutting masonry walls. Runner channels shall be located within 6″ of the walls to support the ends of the cross furring.

At main runner splices, the ends shall be overlapped not less than 12″, with flanges of channels interlocked, and securely tied near each end of the splice with double loops of No. 16 gauge tie wire.

C. Cross furring channels shall be spaced (12″) (13½″) (16″) (19″) (24″) and securely saddle tied with two strands of 16 gauge tie wire to (main runners) (steel joists).

Cross furring shall not be let into or come in contact with abutting masonry walls.

At splices of cross furrings, the ends shall be overlapped not less than 8″, with flanges of channels interlocked, and securely tied near each end of the splice with double loops of No. 16 gauge tie wire.

USG METAL LATH AND LATHING SPECIFICATIONS (Cont.)

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS

S-1. Nailing to Wood Supports

Metal lath shall be secured to framing at intervals not to exceed 6″ o.c. by one of the following methods:

1. Metal lath shall be attached to vertical framing members with:

(a) 4d common nails driven to ¾″ penetration and bent over to engage at least three strands of diamond mesh lath or a rib of rib lath.

(b) 1″ roofing nails, 7⁄16″ head, driven home and so as to engage at least two strands of diamond mesh or through the rib of rib lath.

(c) 1″, 14-gauge wire staples, driven home without crushing the lath strands and engaging at least two strands of diamond mesh lath or through the rib of rib lath.

2. Metal lath shall be attached to horizontal framing members with: 1½″, 11-gauge barb roofing nails with 7⁄16″ head, to engage at least two strands of diamond mesh or through the rib of rib lath.

S-2. Nailing to Nailable Steel Supports

Metal lath shall be secured to framing at intervals not to exceed 6″ o.c. with nails of size and type recommended by manufacturer of nailable steel supports.

S-3. Metal Lath Secured to Steel Joists

Metal lath shall be secured to the lower flanges of steel joists with one loop of 16-gauge tie wire, or two loops of 18-gauge tie wire, at intervals not to exceed 6″ o.c. Ends of tie wire shall be given at least three twists.

S-4. Metal Lath Attached to Rib Concrete Construction.

Hangers for attaching metal lath directly to the underside of concrete joists form construction shall be provided with a loop or other deformation to positively enter the concrete or be secured to the reinforcing steel.

They shall be of not less than (2 strands of No. 14-gauge galvanized annealed wire when twisted as for tie wire) or (No. 10-gauge galvanized wire when struck over to support the lath). Hangers shall be spaced at not-to-exceed 5″ intervals along bottom of the joist.

Where spacing of concrete ribs exceeds 24″ center to center, there shall also be placed No. 12-gauge galvanized wire hangers through the center of the top surface of each row of forms and spaced not to exceed 36″ centers longitudinally. There shall be a loop in each hanger to engage the concrete and ¾″ channels running parallel to, and between, the rows of joists and shall be saddle tied to these hangers. Metal lath shall be ⅜″ rib lath weighing not less than 3.4 lbs. sq. yd., securely attached to the underside of the concrete joist by twisting the No. 14-gauge wire hangers as for tie wire, or by clinching of other types of hangers, and by tying to the channels with No. 18-gauge galvanized annealed wire at intervals not exceeding 6″ o.c. A tie wire shall be placed at side laps of sheets between supports. Where spacing of concrete joists does not exceed 24″ center to center, the ⅜″ rib metal lath shall be securely attached to the undersides of the concrete joists by twisting the No. 14-gauge wire hangers as for tie wires or by clinching of other types of hangers.

S-5. Furred Ceiling on Wood Joists

16d common nails spaced to conform to spacing of furring members, shall be driven horizontally through each joist at least 2″ above the lower edge; the point and head to project equally from the side of joist.

Channel furring shall be attached at right angles to joist, shall not exceed a spacing of (12″) (13½″) (16″) (19″) (24″), flush against the bottom edges by securely wire-tying the furring to each nail with not less than four strands of 18-gauge tie wire, saddle-tied. Metal lath shall be attached to the steel furring with wire ties at intervals not to exceed 6″.

S-6. Furred Ceiling on Steel Joists

Furring members shall be ¾″ cold rolled channels and shall not exceed a spacing of (12″) (13½″) (16″) (19″) (24″) and shall be erected at right angles to the steel joists. They shall be securely attached to the bottom flanges with (two strands of 16-gauge) or (four strands of 18-gauge) galvanized wire or other approved attachment of equal strength.

S-7. Metal Lath Vertical Furring

USG Adjustable Wall Furring Brackets shall be attached to the masonry walls not over 4″ from columns or other abutting construction, and not over 36″ on center vertically and horizontally, and as required above and below windows, using one 2″ cut nail in top hole of bracket in mortar joints of brick, clay tile, or cement block or in the field of lightweight aggregate blocks, or using ⅝″ concrete stud nails or power-driven nails in monolithic concrete. In masonry construction, brackets can be embedded in mortar joints as masonry is laid. Furring channels shall be laid horizontally on the furring brackets with the legs down, and wire-tied to the bracket with a double strand of 18-gauge tie wire. Excess bracket length shall be bent down.

Vertical members shall be not less than ¾″ cold rolled channels. They shall be spaced (12″) (13½″) (16″) (19″) (24″). They shall be securely saddle-tied to horizontal members with a double strand of 16-gauge wire at each crossing, and

USG METAL LATH AND LATHING SPECIFICATIONS (Cont'd)

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (Cont.)

shall be securely anchored to the floor and ceiling construction. (Note: Where dampproofing has been damaged in installation of attachments, it shall be pointed up with the same material before proceeding with the installation of the furring.)

S-8. Channel Studs, Metal Lath and Plaster SOLID PARTITION

Studs shall be not less than ¾″ cold rolled channels spaced (16″) (24″), securely anchored at floor by:

(Engaging tongue of the USG Double Metal Base Clip.)

(Bending ends of studs and nailing directly to concrete floors with concrete stub nails or nailing to wood runner fastened to floor.)

(Setting in holes of Z type ceiling runner nailed to wood runner or floor.)

(Wire tying to L type ceiling runner nailed to wood runner or floor.)

Studs shall be securely fastened to the soffit of the floor or roof above, or to the joists or to a suspended ceiling by:

(Inserting in Z type ceiling runner nailed or wire-tied to ceiling.)

(Wire tying to L type ceiling runner nailed or wire-tied to ceiling.)

(Punching studs through ceiling lath and wire-tying to furring channels.)

Top clearance shall be such that studs will not bow when erected.

Where 2-piece studs are necessary, they shall be spliced by lapping not less than 8″, with flanges interlocked, and securely wire tying 1″ from each end of splice.

Studs adjacent to openings shall be securely anchored to the frames or bucks or studs adajcent to bucks may be omitted if other means of anchoring lath is provided and bucks are temporarily braced before plastering. Where wood bucks are used, 8d nails shall be driven in pairs into both jambs of the wood buck at intervals of 2′, beginning 9″ above floor, and channel studs securely wire-tied to the nails.

A horizontal reinforcing (⅛″ by 1¼″ flat iron) (⅜″ diameter rod) shall be saddle tied to the channels 8″ above top of door to the channel side and extend continuously past the first studs at full spacings beyond the line of door frame or buck.

Metal lath shall be secured, one side only, to each channel stud by 18-gauge galvanized tie wire at 6″ intervals.

S-9. Studless Metal Lath and Plaster Solid Partitions

(USG Metal Base) (2″ wide by 1⅝″ high routed wood floor runners) shall be securely attached to the floors by means of fasteners suitable to floor materials.

L-Type ceiling runners shall be located so that the metal lath will be in the center of the partitions and plumb. (Runners shall be fastened to concrete ceilings with stub nails or other approved means.) (Runners shall be fastened to metal lath ceilings with wire-ties at approximately 12″ spacings.)

3.4 lb. ⅜″ rib lath shall be erected with the long dimension of the sheet vertical (attached to floor runners) (Set in groove of grouted metal base assembly) and securely anchored to ceiling runners with wire ties 8″ o.c. A wire tie shall be placed where sheets nest approximately 9″ o.c. (Metal lath shall be wire tied to inserts of steel door frames.) (Where wood bucks are used, metal lath shall be wire-tied to USG runner nailed not over 8″ o.c. to back of buck.)

Temporary bracing—Bracing shall be not less than ¾″ C.R. channel placed horizontally near mid-height of partition, tied to metal lath at 24″ o.c. and with 1½″ channel or 1½″ angle braces placed vertically not over 6′-0″ on centers. Wedge vertical braces at top and bottom and tie to ¾″ horizontal channel to hold lath in vertical position.

(Note to Architect: *Where metal door bucks are used, they shall be furnished with inserts to which the metal lath can be wire-tied.)*

S-10. USG Metal Base

Metal base shall be notched to a neat miter in forming all angles. In continuous runs, ends shall be evenly butted and internally spliced with splice plates. Base shall be securely held in place by clipping to base clips at:

(16″ o.c. (TRUSSTEEL) (Channel) Studs)

(24″ o.c. studless solid plaster partitions)

(12 to 16″ o.c. masonry walls)

Base clips shall be secured by nailing to floor or masonry walls and by wire tying to metal studs.

S-11. Metal Lath Resilient System

USG Metal Lath Resilient System, where shown on plans or otherwise indicated in this specification, shall be:

(a) Suspended ceiling grillage. ¾″ channels shall be supported on USG clip No. 100, spaced (13½″) (16″) o.c. along the 1½″ carrying channels.

(b) Wood stud and joist framing spaced not over 16″ o.c. USG No. 200 clips shall be spaced 12″ o.c. along joists and attached

USG METAL LATH AND LATHING SPECIFICATIONS (Cont'd)

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC ALTERATIONS (Cont.)

with 4d common nails. USG No. 200 clips shall be spaced not over 16″ o.c. along the studs and attached with 4d common nails. ¼″ pencil rods shall be wire-tied to inside of tongue on the clips and metal lath wire-tied to the pencil rods.

(c) Trussteel stud partitions. USG No. 400 clips shall be spaced not over 16″ o.c. along stud and wire-tied with 18-gauge tie wire. A ¼″ pencil rod shall be wire-tied to the notch on the outside flange of the clip.

(d) Masonry walls. USG No. 500 clips shall be spaced not over 18″ o.c. vertically supporting ¾″ furring channels not over 16″ o.c. USG No. 500 clips shall be attached to (gypsum tile with 2″ staples or 10d cut nails driven through hole in clip into solid section of tile) (brick or clay tile or masonry walls with 10d cut nails driven through hole in clip into the mortar joint). Channels shall be wired to the inside of the tongues of the clips with the webs of the channels away from the lath and metal lath wire-tied to the channels.

S-12. TRUSSTEEL Stud Partitions

Unless otherwise specified, all interior non-load-bearing partitions shall be (2½″) (3¼″) (4″) (6″) Trussteel Stud partitions. Trussteel Stud runner tracks shall be aligned accurately according to partition layout and securely attached to floor and ceiling construction. Studs shall be erected vertically not to exceed 16″ o.c. secured to floor and ceiling runner track with attachment shoes, wire-tied around studs with a double strand of 18-gauge tie wire. Framing shall provide studs located approximately 1½″ from abutting partitions or wall constructions, at all openings and 1½″ from each side of all internal angles. Securely wire-tie door buck anchors to the adjacent studs. Metal lath shall be wire-tied to the studs 6″ o. c.

S-13. Beam Fireproofing

For beams and girders, framework shall be formed to contour in size shown on drawings, of ¾″ channels as follows:

(a) Where ¾″ channels are used for longitudinal furring, each member of the cornice or beam brackets shall be not more than 3′-0″ apart.

(b) Where ¼″ pencil rods are used, brackets shall not exceed 19″ apart.

(c) Where longitudinal furring is not used, brackets shall not exceed 13½″ on centers for 3.4 lb. diamond mesh metal lath, provided that at least one row of channel shall be installed to hold work in proper shape.

Brackets shall be saddle tied to structural members with not less than four strands of No. 16 gauge wire. For tying longitudinal members to brackets, wire shall be not less than 16 gauge galvanized wire, and, for tying metal lath to rods of channels, wire shall not be less than 18-gauge galvanized wire.

Brackets shall be formed to require a minimum of plaster in accordance with details furnished by the architect. Brackets shall be securely wired, bolted or clamped to walls, ceilings, or structural members, as the case may require. For fastening brackets to various bases adequately strong anchorage shall be provided.

Metal lath shall be applied to the longitudinal channels or rods or direct to brackets and be bent into and made to conform with the outline of the finished beam or cornice. Side laps shall not occur at the corners, but lath shall be carried around to the next members or corner strips shall be used at all corners.

S-14. Column Fireproofing

Lathing for fireproofing of columns shall be done by (applying self-furring diamond mesh lath formed to neatly fit the column and wire tied not over 6″ o.c. at all laps) (installing ¾″ channel brackets and studs properly spaced to provide design lines shown or to enclose pipes and ducts, as required. Attach diamond mesh metal lath wire tying it to channels with 18-gauge tie wire spaced not over 6″ o.c.). No. 1-A corner beads shall be wired tied to the metal lath so as to provide plaster thickness specified or shown.

PYROBAR* PARTITION TILE

DESCRIPTION

PYROBAR is a precast gypsum partition tile. It is made in various thicknesses, both solid and hollow, with indented surfaces to receive plaster.

Sizes—see technical data below.

Complies with ASTM Designation C52-41 and Federal Specification SS-T-316.

FUNCTION & UTILITY

Fireproof—gypsum is incombustible and will not communicate high temperatures until completely calcined, a very slow process. Fire resistance ratings shown in technical data below.

Light Weight—saves structural steel—generally 30% to 50% lighter than other masonry partitions of like thickness. Unit weights shown in technical data below.

Plaster Bond—Authoritative tests show that gypsum plaster bonds to PYROBAR Partition Tile with factor of safety of 173.

Saves Plaster—the large size, machine moulded units lay accurately to a straight line. Grounds are ½″ instead of ⅝″ or ¾″ as for other masonry partitions.

Resistant to Sound Transmission—see technical data below.

Low in Cost Because:

(a) Material cost is low.
(b) The large units (2½ sq. ft. surface area) lay into wall fast, thus reducing labor costs.
(c) Lightness in weight reduces labor costs.
(d) Fewer joints, saves mortar up to 40%.
(e) Ease of cutting reduces waste, and lowers cost of alterations or remodeling.
(f) Requires 20% less plaster than masonry units requiring ⅝″ grounds.

LIMITATIONS OF USE

1. PYROBAR, although having a considerably higher compression strength than 75 lbs. per sq. inch gross area as required by ASTM Designation C52-41, is designed for non load-bearing partitions and should not be used for load bearing construction.

2. Portland cement and lime mortars do not bond adequately with PYROBAR and should not be used for erecting PYROBAR. Use RED TOP* Gypsum Cement Plaster for plastering and RED TOP Partition Tile Cement mixed with not more than 3 parts of sand by weight for joint mortar.

3. For the reason given above, portland cement or lime plasters should not be used over PYROBAR. Before applying portland cement bedding for ceramic tile, metal lath shall be nailed to PYROBAR. Alternately, other types of masonry, such as structural clay tile may be used as backing for ceramic tile.

4. Where reinforced concrete or concrete fireproofed structural steel construction is used, the best recommended practice is that the partitions be located so that at least a 1″ break in the plaster face is provided at juncture of partition with column and/or beam or that one of the following procedures be followed:

(a) Furring off the face of such members, allowing the PYROBAR to carry across the faces of such structural members.

(b) By scatter nailing, 12″ o.c. No. 30 asphalt felt and 2.5 lb. diamond mesh metal lath across the faces of such structural members, carrying felt and metal lath out at least 1″ onto the PYROBAR and stapling to the PYROBAR.

TECHNICAL DATA FOR GYPSUM PYROBAR PARTITION TILE

STRUCTURAL

Size (12″x30″) Thickness & Type	Limiting Partition Height	Approx. Wgt. Per Sq. Ft.		Partition Tile Cement Required Per M Sq. Ft. of Tile
		Tile	Plastered Partition Sand Aggregate	
2″ Solid	10′	10 Lbs.	20.5 Lbs.	500 Lbs.
3″ Hollow	13′	9½ Lbs.	20 Lbs.	700 Lbs.
4″ Hollow	17′	13 Lbs.	24 Lbs.	900 Lbs.
6″ Hollow	30′	20 Lbs.	32 Lbs.	1300 Lbs.

FIRE RATINGS AND SOUND TESTS (1)

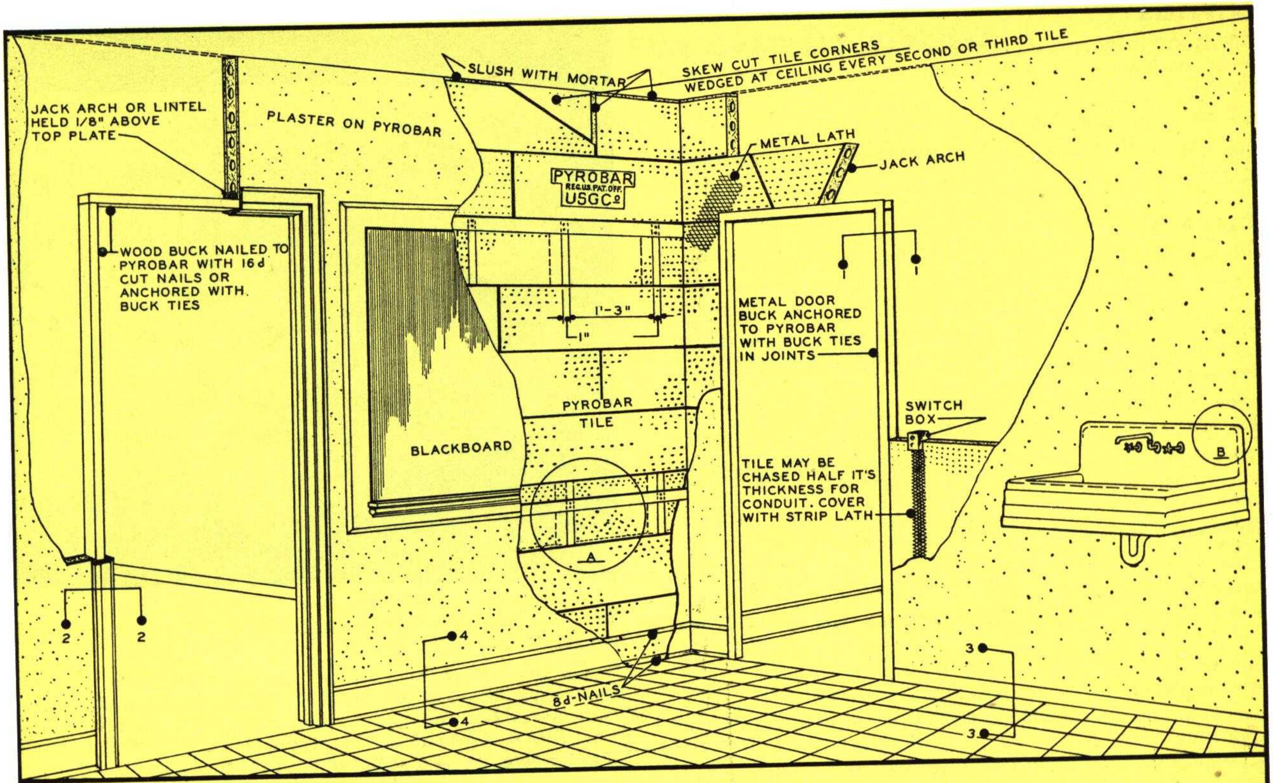
	Construction	Fire Rating	Average Sound Transmission Loss in Decibels
Partitions	2″ Solid—No Plaster	1 Hour	
	3″ Hollow Plastered 1 Side	1½ Hours	
	3″ Hollow Plastered 2 Sides	3 Hours	39.2 (2)
	4″ Hollow Plastered 1 side	3 Hours	
	4″ Hollow Plastered 2 sides	4 Hours	42.8
	6″ Hollow	Not Tested—Assumed to equal or exceed 4″ Hollow PYROBAR	
Steel Cols.	2″ Solid—Plastered	4 Hours	
	3″ Hollow—Plastered	4 Hours	

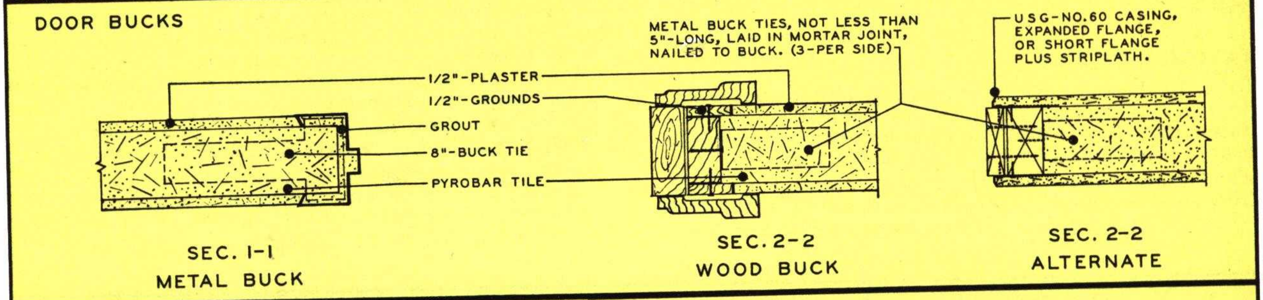
(1) All tests made at Nationally recognized Testing laboratories. All ratings tabulated are based on PYROBAR laid in gypsum-sand mortar and plastered to ½″ Grounds with gypsum-sand 1:3. 3″ Hollow PYROBAR Laid in gypsum-perlite mortar and plastered (two sides) to ½″ grounds with gypsum-perlite (100.3½) had a Fire Endurance Time of 3 hours 55 minutes and passed a 4-hour Fire and Hose Stream Test.

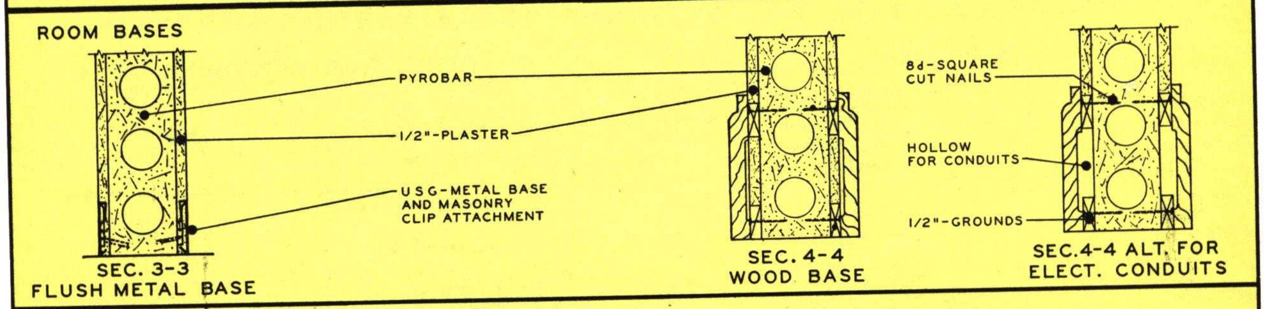
(2) Average Decibel Transmission loss 57.6 when furred one side only with USG No. 500 Resilient Clips supporting metal lath and both sides plastered (TRBM-44 National Bureau of Standards).

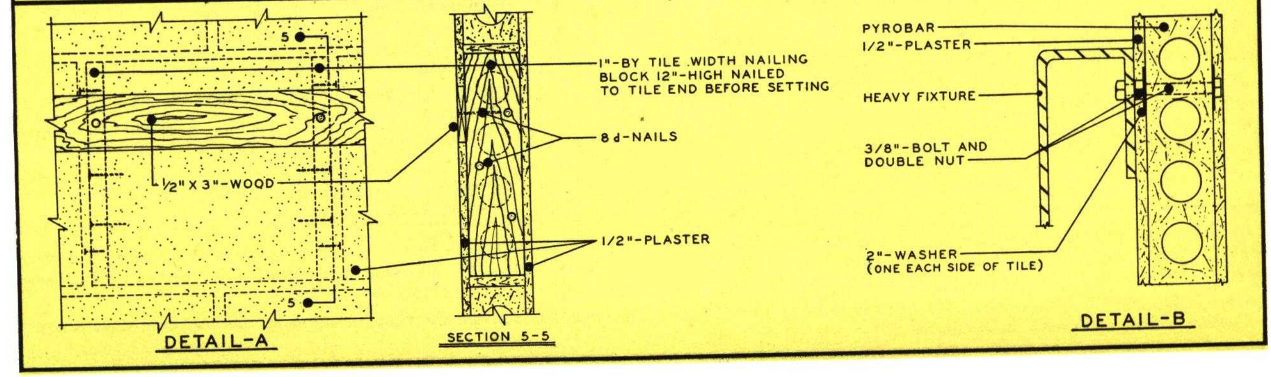
**Trademarks Reg. U. S. Pat. Off.*

PYROBAR PARTITION TILE

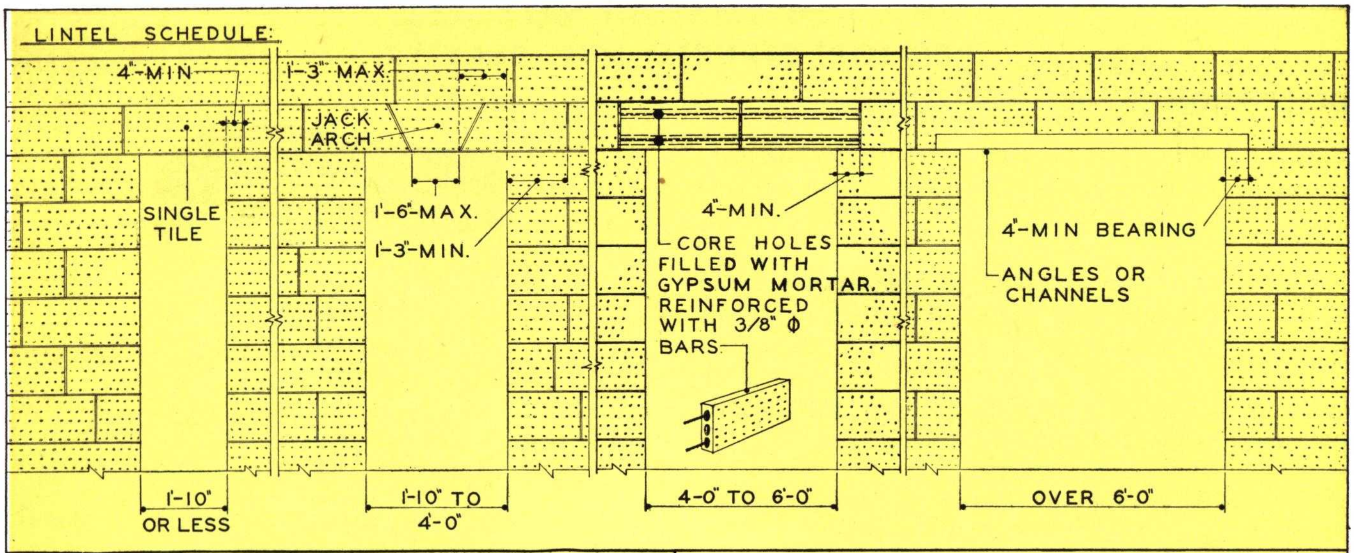

SLUSH WITH MORTAR
SKEW CUT TILE CORNERS
WEDGED AT CEILING EVERY SECOND OR THIRD TILE
JACK ARCH OR LINTEL HELD 1/8" ABOVE TOP PLATE
PLASTER ON PYROBAR
METAL LATH
JACK ARCH
PYROBAR REG.U.S.PAT.OFF. USGC^o
WOOD BUCK NAILED TO PYROBAR WITH 16d CUT NAILS OR ANCHORED WITH BUCK TIES
1'-3"
1"
METAL DOOR BUCK ANCHORED TO PYROBAR WITH BUCK TIES IN JOINTS
PYROBAR TILE
BLACKBOARD
SWITCH BOX
TILE MAY BE CHASED HALF IT'S THICKNESS FOR CONDUIT. COVER WITH STRIP LATH
A
B
1
1
2
2
4
4
3
3
8d-NAILS

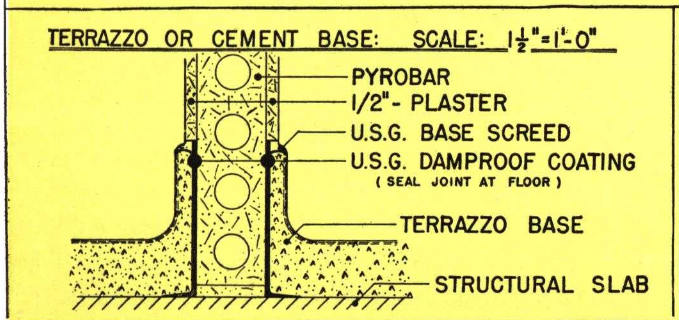

DOOR BUCKS
1/2"-PLASTER
1/2"-GROUNDS
GROUT
8"-BUCK TIE
PYROBAR TILE
METAL BUCK TIES, NOT LESS THAN 5"-LONG, LAID IN MORTAR JOINT, NAILED TO BUCK. (3-PER SIDE)
USG-NO.60 CASING, EXPANDED FLANGE, OR SHORT FLANGE PLUS STRIPLATH.
SEC. 1-1
METAL BUCK
SEC. 2-2
WOOD BUCK
SEC. 2-2
ALTERNATE

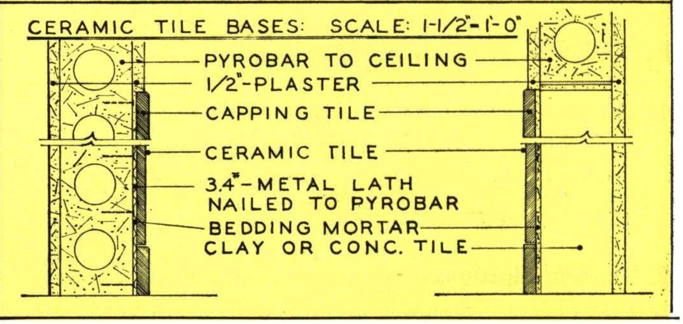




PYROBAR PARTITION TILE







MASONRY SPECIFICATIONS FOR PYROBAR PARTITION TILE

SCOPE: Unless otherwise shown on plans, all partitions, including pipe chases, shafts, etc., shall be constructed of gypsum partition tile.

MATERIALS

Gypsum Partition Tile shall be PYROBAR, of sizes indicated, as made by United States Gypsum Company.

Cement for mortar shall be RED TOP Partition Tile cement as made by United States Gypsum Company.

Sand shall be clean and sharp, complying with ASTM Designation 35-53T.

Wood Nailing Blocks shall be not less than ¾″ thick by 12″ long by the thickness of the PYROBAR Tile.

ERECTION

All mortar shall be mixed in proportions of 1 part Partition Tile Cement to 3 parts sand, by weight. Mortar shall not be retempered. After door bucks are erected and rough plumbing and wiring is in place, the first course shall be laid with core holes horizontally by bedding in mortar to a true and straight line according to partition layout as shown on plans. Succeeding courses shall be laid to a line in ½″ thick full mortar beds, uniformly level in each course, and with vertical joints staggered. Cut all joints flush. Partitions shall be well anchored to intersecting masonry walls 12½″ on centers vertically with corrugated wall ties or 16d or 20d cut nails. Wedge tightly at ceiling and slush full with mortar. All chinks and crevices shall be slushed full with mortar. PYROBAR shall not be chased out more than half its thickness for conduit or other piping and such chases shall be covered with metal lath.

Wood door bucks shall be anchored to the PYROBAR with 16d cut nails or 3 buck ties each side (approximately 12″ from top and bottom and at center) laid in the mortar joints, and jack-arch or lintel construction shall be held ⅛″ above top plate and not slushed with mortar.

Steel door frames shall be anchored with ties furnished by frame manufacturer, minimum of 3 each side (approximately 12″ from top and bottom and at center) in mortar joints and space between tile and hollow frame slushed with mortar.

OPTIONAL INCLUSIONS: (See details).

1. Lintels shall be formed as follows: Openings of 22″ or less with single tile. Openings between 22″ and 48″ with reinforced lintel or jack-arch construction. Openings between 48″ and 72″ with reinforced gypsum lintels. Openings over 72″ with steel angles or channels of sufficient size.

2. Wood Nailing Blocks shall be nailed to one end of each tile before setting into wall wherever fixtures or heavy trim etc., are to be attached to the partition. Hook rails, shelving cleats, or fan brackets may be attached to ½″ x 1½″ wood strips having nails 12″ o.c. in edges embedded in plaster or by use of screw anchors.

3. Heavy Fixtures shall be secured to PYROBAR partitions with bolts through the tile, using large steel washers on both sides. Set bolts into place before plastering.

4. Wood Grounds for plastering shall be nailed into the tile at base and around openings to provide a ½″ total thickness of plaster.

5. Where concrete floor fill, granolithic finish, terrazzo or other wet types of flooring or base materials are to be applied over the rough floor construction subsequent to installation of PYROBAR, a continuous coating of asphaltic material such as USG dampproof coating shall be applied from rough floor up to height of wet application prior to installation of such wet material. Care shall be taken to get thorough application at joint of PYROBAR with rough floor.

RED TOP* STRUCTO-LITE* PLASTER

DESCRIPTION

Red Top Structo-Lite plaster is a high quality basecoat plaster formulated at the mill by proportioning a select expanded perlite with gypsum plaster.

Structo-Lite is packaged in 80 lb. bags (regular) and 67 lb. bags (masonry) and requires the addition of clean water *only* on the job.

Complies with A.S.T.M. Designation C28-50 for "Gypsum Ready Mixed Plaster."

U S G
RED TOP*
STRUCTO-LITE*
PRE-MIXED PERLITE
GYPSUM
PLASTER
UNITED STATES GYPSUM COMPANY
*T. M. REG. U. S. PAT. OFF.
RED TOP STRUCTO-LITE PERLITED GYPSUM PLASTER
RED TOP
STRUCTO-LITE

FUNCTION AND UTILITY

1. **Uniformly Strong Walls**—Proper proportioning of cement plaster with a well graded, controlled-density, perlite aggregate and a mill-controlled set that help insure strength in the plaster slab.

2. **Uniform Hardness**—Because the perlite in Structo-Lite plaster is manufactured to conform with exacting specifications for density, strength and gradation, and is thoroughly mixed with the cement plaster at the mill.

3. **Over Fifty Per Cent Less Weight** in the finished plaster (less on the structural members and framing). Large savings in framing costs are possible.

4. **More Fire Resistant**—Greatly increased fire resistant ratings over those attained with sand in plastered walls and ceilings. Ideally suited where building code requirements demand maximum fire ratings not attainable with sand. For example:

   a. ⅜″ Perforated Rocklath plaster base attached to wood studs spaced 16″ o.c. with R-1 Resilient Clips, plastered to ½″ grounds with Structo-Lite—1 hr. fire rating.

   b. ⅜″ Perforated Rocklath nailed to wood joists spaced 16″ o.c. and plastered to ½″ grounds with Structo-Lite—1 hour fire rating.

   c. ⅜″ Perforated Rocklath attached with Brace-Tite clips to Trussteel Studs, plastered to ½″ grounds with Structo-Lite—1 hour fire rating.

   d. Steel joists 24″ o.c.; 2″ concrete over ⅜″ rib lath top of joists; ⅜″ perforated Rocklath attached with Brace-Tite Clips to ¾″ channels 16″ o.c. wire-tied to joists, plastered with Structo-Lite to ⅝″ grounds—1 hour fire rating.

Structo-Lite plaster, having a mortar weight of half that of a gypsum-sand plaster proportioned 1:3, still develops comparable tensile and compressive strengths. Structo-Lite is strong, quick-drying, light weight, and easy to finish over.

"k" FACTOR = 1.4 (approximate) or about 3 times the insulation value of a gypsum-sand basecoat.

LIMITATIONS

Same as paragraphs 2 to 8 under Limitations for use on Red Top Cement Plaster, page 35.

9. On jobs where Structo-Lite is used to plaster over radiant panel heating systems, the system must be designed by the heating engineer to allow for the insulating value of Structo-Lite. If the design did not contemplate an insulating value equivalent to that of Structo-Lite, do not use it over radiant heating panel portions of the job. See Limitation 8 referred to above.

**Trademark Reg. U. S. Pat. Off.*

RED TOP CEMENT PLASTER

DESCRIPTION

Red Top Cement Plaster is a neat gypsum plaster requiring the addition of an aggregate and water on the job. It is the basecoat that receives the finish coat plaster.

Complies with ASTM Designation C28-50 for "Gypsum Neat Plaster" and Federal Specification SS-P-402, Type N.

FUNCTION AND UTILITY

RED TOP Cement Plaster is used for scratch (1st coat) and brown (2nd coat) wherever good plastering aggregate is available.

Fireproof—Made from gypsum rock, it is incombustible and will not transmit high temperatures until completely calcined; a slow process. In this respect, gypsum plaster is unique. See fire test data page 37, for authoritative fire ratings.

Adaptable—Red Top Cement Plaster bonds firmly with Rocklath plaster base, metal lath, fiber insulation lath, Pyrobar gypsum partition tile, clay tile, porous brick and certain other approved plaster bases.

Red Top Cement Plaster is the standard of excellence for receiving such finish coats as lime putty, keene's cement, gypsum trowel finish, gypsum float finish, Oriental* interior colored finish, gypsum acoustical plasters, etc. It is an excellent base for adhesive application of acoustical tile.

Red Top Cement Plaster is plastic, permitting wide latitude in its use for plain or curved surfaces.

Uniform—Red Top Cement Plaster is manufactured on a nation-wide basis within narrow limits of tolerance. Its "stabilized set" minimizes the hazards due to impure water or aggregate and job conditions. Its set is adjusted for seasonal conditions.

Strong—When mixed with good sand according to specifications, Red Top Cement Plaster has a compressive strength up to 1,200 lbs. psi for normal mixes (see test data, page 37). It is capable of withstanding normal wear and usage for the life of the building.

Economical—Red Top Cement Plaster is lowest in cost of the various types of gypsum basecoats because:

The neat plaster is low in cost and is mixed with economical aggregate which increases bulk and coverage.

Red Top Cement Plaster is highly plastic, thus is easily and quickly applied by the mechanic.

Normal usage requires little or no maintenance.

LIMITATIONS OF USE

1. Red Top Cement Plaster should have aggregate added strictly according to specifications. Use of too much aggregate drastically decreases its strength. Sand content is easily calculated. A No. 2 shovel full of damp sand weighs approximately 15 lbs. The light weight aggregates are generally shipped in 3 or 4 cu. ft. bags.

2. Two coat plastering not recommended over fiber insulation lath.

3. Under no conditions should Red Top Cement Plaster be applied to concrete. Use Bondcrete* Plaster, described on page 36.

4. Red Top Cement Plaster should not be used where contact with excessive water or moisture is expected. In such instances, use portland cement-lime plaster.

5. Red Top Cement Plaster is an interior basecoat plaster and should not be used on the exterior where exposed to the elements.

6. Because bituminous compounds do not provide an ideal base for gypsum plaster basecoats, plaster application on masonry walls and concrete that have been coated with these compounds **is not recommended.**

7. Due to possibility of condensation or water seepage, plastering direct to interior side of exterior masonry walls is not recommended. Furring such walls prior to plastering **is recommended.**

8. When used in conjunction with radiant heating systems, the temperature at the surface of the plaster shall not exceed 115° Fahrenheit. The thermal conductivity of gypsum-sand plaster is approximately three times that of a gypsum-lightweight aggregate mix.

**Trademarks Reg. U. S. Pat. Off.*

RED TOP WOOD FIBER PLASTER

DESCRIPTION

Red Top Wood Fiber Plaster is a factory-prepared gypsum basecoat plaster containing finely-shredded, selected wood fiber. It requires the addition of water only on the job.

Complies with ASTM Designation C28-50 "Gypsum wood-fibered plaster" and Federal Specifications SS-P-402, Type W.

FUNCTION AND UTILITY

Stronger—Compared to plaster sanded 1:3, Wood Fiber Plaster has:

3 times greater compressive and tensile strength.
2½ times greater resistance to lateral impact.
50 per cent greater surface hardness.
Consequently, has greater resistance to cracking.

Fireproof—Generally 50 per cent more fire resistant than sanded plaster. See ratings on page 37.

Factory Prepared—Particularly suitable where good aggregates are unavailable. Avoids dangers of improper proportioning of aggregates.

Lightweight—Dead load is 25 per cent lighter than sanded plaster.

Cost—A wood fiber basecoat plaster job costs approximately 10 to 15 per cent more than Red Top Cement Plaster sanded on the job.

LIMITATIONS

Same as paragraphs 2 to 7 under Limitations for use of Red Top Cement Plaster, page 35.

**Trademark Reg. U.S. Pat. Off.*

BONDCRETE* PLASTER

DESCRIPTION

Red Top Bondcrete is a gypsum basecoat plaster specially formulated to bond with rough interior monolithic concrete surfaces. It is factory prepared, requiring addition of water only on the job.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

Bondcrete is plaster especially prepared for application to concrete. It provides the bonding plaster to receive a browning, or leveling, coat of Red Top Cement Plaster or Wood Fiber Plaster when necessary.

If a leveling coat is unnecessary, the finish plaster may be applied directly to the Bondcrete.

Bonding Strength—Bondcrete adheres well to properly prepared concrete surfaces. See Surface Preparation under Specifications for proper conditioning of concrete surfaces. This is important.

The thermal coefficient of expansion of Bondcrete is approximately the same as for concrete.

Low Cost—An economical bonding coat to provide for the application of plaster direct to concrete surfaces.

LIMITATIONS OF USE

1. Bondcrete should be used only on concrete that is properly prepared for plastering. It should never be applied to smooth concrete. (See Red Top Cover Coat, page 41.)

2. Maximum thickness of Bondcrete and basecoat shall not exceed ⅜″ on ceilings or ⅝″ on walls. If additional thickness is required, metal lath shall be secured to the concrete surfaces.

3. The same as paragraphs 4 to 8 under Red Top Cement Plaster, page 35.

BASECOAT PLASTERS

TECHNICAL DATA—AVERAGE TEST RESULTS

(NOTE—results from separate producing plants may vary somewhat—above or below these average figures)

	STRUCTO-LITE	WOOD FIBER	CEMENT PLASTER						
			SAND			VERMICULITE		PERLITE	
MIX:		Neat	1:1	1:2	1:3	100:2	100:3	100:2	100:3
COMPRESSIVE STRENGTH—psi (dry)	900	2600	2100	1200	750	500	300	1000	650
TENSILE STRENGTH—psi (dry)	150	440	245	170	120	130	90	165	105

FIRE TEST DATA

(All tests made at nationally recognized fire testing laboratories)

PANEL TYPE				RATING
CONSTRUCTION	**TYPE BASE**	**PLASTER & AGGREGATE**	**THICKNESS**	
		PARTITIONS		
Wood Frame	⅜" ROCKLATH Plain	Gypsum-Sand 1:2, 1:2	½"	45 Minutes
Wood Frame	⅜" ROCKLATH Plain	Gypsum Wood Fiber	½"	1 Hour
Wood Frame	⅜" Perf. ROCKLATH	Gypsum-Sand 1:2, 1:2	½"	1 Hour
Wood Frame	⅜" Perf. ROCKLATH	Gypsum-Perlite 100:2½	½"	1 Hour
Wood Frame	⅜" Perf. ROCKLATH	Gypsum-Vermiculite 100:2½	½"	1 Hour
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	¾"	45 Minutes
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:2	¾"	1 Hour
Wood Frame	Metal Lath	Gypsum Wood Fiber	¾"	1½ Hours
Wood Frame	Metal Lath	Gypsum-Vermiculite 100:2½, 100:3½	¾"	1 Hour
3" Hollow PYROBAR		Gypsum-Sand 1:3	½"	3 Hours
4" Hollow PYROBAR		Gypsum-Sand 1:3	½"	4 Hours
Solid	Metal Lath	Gypsum-Sand 1:2, 1:3	2"	45 Minutes
Solid	Metal Lath	Gypsum-Sand 1:2, 1:2	2"	1 Hour
Solid	Metal Lath	Gypsum-Perlite 100:2, 100:3	2½"	2 Hours
Solid	ROCKLATH	Gypsum-Sand 1:1, 1:2	2"	1 Hour
Solid	1½" ROCKLATH	Gypsum-Perlite 100:2, 100:3	2"	1½ Hours
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:3	¾"	45 Minutes
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:2	¾"	1 Hour
TRUSSTEEL Stud	Metal Lath	Gypsum Wood Fiber	⅞"	2 Hours
TRUSSTEEL Stud	Metal Lath	Gypsum-Perlite 100:2, 100:3	1"	2 Hours
TRUSSTEEL Stud	⅜" Perf. ROCKLATH BRACE-TITE Clips	Gypsum-Sand 1:2 or STRUCTO-LITE	½"	1 Hour
		CEILINGS		
Wood Frame	⅜" Perf. ROCKLATH	Gypsum-Sand 1:2	½"	45 Minutes
Wood Frame	⅜" Perf. ROCKLATH (A)	Gypsum-Sand 1:2	½"	1 Hour
Wood Frame	⅜" Perf. ROCKLATH	Gypsum-Perlite 100:2½	½"	1 Hour
Wood Frame	Metal Lath (B)	Gypsum-Sand 1:2, 1:3	¾"	1 Hour
Wood Frame	Metal Lath	Gypsum Wood Fiber	¾"	1 Hour
Steel Joist (C)	⅜" Perf. ROCKLATH BRACE-TITE Clips Channels 16" o.c.	Gypsum-Perlite 100:2½ or STRUCTO-LITE	⅝"	1 Hour
Steel Joist (C)	Same, plus 14 Ga diagonal wire connecting clips	Gypsum-Perlite 100:2½	½"	2 Hours
Steel Joist (C)	Same, except channels 12" o.c.	Gypsum-Perlite 100:2½	⅝"	3 hours
Steel Joist (C)	Metal Lath	Gypsum-Sand 1:2, 1:3	¾"	2 Hours
Steel Joist (C)	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	¾"	3 Hours
Steel Joist (C)	Metal Lath	Gypsum Wood Fiber	1"	3 Hours
Steel Joist (C)	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours
Cellular Steel Floor	Metal Lath (D)	Gypsum Wood Fiber	1"	4 Hours
Cellular Steel Floor	Metal Lath (E)	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours
Cellular Steel Floor	Metal Lath (D)	Gypsum-Perlite 100:2, 100:3	1"	4 Hours
		COLUMNS		
Steel Section	Metal Lath	Gypsum-Sand 1:2, 1:3	¾"	1 Hour
Steel Section	Metal Lath (F)	Gypsum-Perlite 100:2, 100:3	1"	2 Hours
Steel Section	Metal Lath (F)	Gypsum-Perlite 100:2, 100:3	1⅜"	3 Hours
Steel Section	Metal Lath (F)	Gypsum-Perlite 100:2, 100:3 or Structo-Lite	2"	4 Hours
Steel Section	Pyrobar-2" Solid, or 3" Hollow	Gypsum-Sand 1:3	½"	4 Hours
Steel Section	⅜" Perf. ROCKLATH	Gypsum—Sand 1:2½	½"	1 Hour
Steel Section	⅜" Perf. ROCKLATH	Gypsum—Sand 1:2½	⅝"	1½ Hours
Steel Section	⅜" Perf. ROCKLATH	Gypsum—Perlite 100:2½	1"	2 Hours
Steel Section	⅜" Perf. ROCKLATH	Gypsum—Perlite 100:2½	1¾"	3 Hours
Steel Section	2 layers L. L. R. L Plus 1" 20-ga. mesh	Gypsum—Perlite 100:2, 100:3	1½"	4 Hours

(A) Lath applied with 1⅛", 13 gauge nails, ⅜" head and joints covered with Striplath. 1¾" nails. (B) Lath applied with 1½", 11 gauge, 7/16" head barbed roofing nails, 6" O.C. (C) 2½" reinforced concrete slab on Riblath or 2" precast gypsum tile above. (D) Ceiling 9" or more below floor slab. (E) Ceiling 3" or more below floor slab. (F) Self-furring metal lath wrapped tight to column or diamond mesh on channel frame not filled solid to column.

FINISHING PLASTERS

DESCRIPTION

The finish coat plaster provides the base for final wall or ceiling decoration. It is applied to a thickness of $\frac{1}{16}''$ to $\frac{1}{8}''$, usually over a gypsum plaster basecoat.

Several types of finish coats are available, each with characteristics to serve specific requirements, and generally classified according to the principal cementitious ingredient as follows:

1. Lime and Gauging, commonly known as "white coat" for a smooth white trowel finish. It consists of lime, soaked to a smooth putty, and mixed with gypsum gauging plaster. With addition of sand, is adaptable for sand float finishes. The three essentials to a good white coat job are:

a. Lime must be highly plastic and completely hydrated.

b. Correct proportioning of gauging plaster to lime putty (see specifications) and thorough blending of ingredients.

c. Careful application and sufficient trowelling to produce a smooth glossy surface.

2. Lime and Keene's—for extra hard smooth white trowel finish. With addition of sand, is adaptable for sand float finishes. Also available mill mixed and colored under "ORIENTAL"* Interior Finish brand.

3. Gypsum—Trowel (smooth), or sand float prepared finishes.

4. Acoustical Plaster—(SABINITE*), (USG Hi-Lite) for sound absorption. (See page 41 and pages 2 and 3, section 10a/Uni.)

ESSENTIALITY OF COMPLETE HYDRATION IN DOLOMITIC FINISHING LIMES

Some years ago an exhaustive investigation was undertaken by the National Bureau of Standards in co-operation with several architects and lime manufacturers to determine reasons for "lime bulges" (delamination of finish from basecoat) occurring on many government and private buildings. The failures investigated occurred on surfaces which had been "white coated" with *dolomitic* hydrated finishing limes from the Ohio fields, which have been widely used. Failures often occur 5 or 10 years after erection of the buildings.

After much analysis, it was the consensus of opinion that the delayed hydration and attendant expansion of unhydrated oxides in the "normal" dolomitic finishing limes resulted in bulging and delamination.

To correct this difficulty, United States Gypsum Company took the lead in developing "IVORY"* Double Hydrated finishing lime, a "fully" or "pressure" (less than 8 per cent unhydrated) hydrated Ohio dolomitic finishing lime.

ASTM specifications C206-49 for *special* finishing lime and proposed amendments to Federal specifications, have been written to cover 92 per cent hydrated limes; a specification has been published by the National Lime Association. This type of finishing lime is required by ASA Specifications for Gypsum Plastering, A42.1-1950.

Note that all high calcium hydrated limes (properly soaked) comply with these requirements as do high calcium quicklimes (properly slaked).

TECHNICAL DATA—FINISH PLASTERS

	GAUGING PLASTER TO LIME	STRUCTO-GAUGE TO LIME		QUICK TROWELLING KEENE'S TO LIME		GYPSUM TROWEL FINISH	GYPSUM FLOAT FINISH	ORIENTAL FINISH
Mix by weight of dry materials:	1:2	1:2 Medium Hard	1:1 Hard	2:1 Medium Hard	4:1 Hard	NEAT	NEAT	NEAT
Color	White	White	White	White	White	White	White or Gray	7 Colors
Finish Texture	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth	Float	Float
Hardness in Kilograms (†)	34	56	108	50	70	55	(‡)	(‡)
Workability	1	1	2	4	7	3	6	5
Cost Factor Labor & Mat'l.	100	125	150	170	180	125	125	160

(†) Kilograms required to force a 10MM ball .01" into plaster face.

(‡) These are hard finishes but the aggregate in the surface does not permit an indication with this test.

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FINISHING PLASTERS—CONT.

LIME PUTTY—GAUGING (WHITE COAT) FINISH

DESCRIPTION

Hydrated Finishing Lime (or Finishing Quicklime) is soaked (or slaked) to putty consistency, blended in proper proportion with gypsum gauging plaster, and is trowelled to a smooth, hard finish usually over a properly prepared gypsum basecoat. This is by far the most widely used plaster finish coat due to ease of application, flexibility, whiteness and economy.

The function of lime in a finish plaster is to provide the "spread" and plasticity to permit fast, easy application with full flexibility and economy. Lime does not "set," but hardens slowly; it likewise shrinks on drying. Therefore, gypsum gauging must be blended into the lime in proper proportion to provide initial set and strength, and to avoid shrinkage cracks.

IVORY*—A double hydrated (over 92%) special finishing lime that will not expand measurably in the wall. *Requires no soaking* to produce a smooth, uniform, white, highly plastic putty. May be mixed by adding dry lime to water in mechanical mixer because it develops its normal plasticity almost immediately then adding gauging. This is the preferred lime. Meets ASTM Designation C206-49 Type S and Federal Specification SS-L-351, Type F, including the added requirement of not more than 8% unhydrated oxides.

RED TOP and GRAND PRIZE*—Shipped from *Genoa, Ohio*, are normal dolomitic hydrated finishing limes, and are only partially hydrated. They comply with Federal Specification SS-L-351, Type F, and ASTM Designation C6-46, Type N, but do not comply with specifications limiting the unhydrated oxides to 8 per cent.

RED TOP Hydrated Limes shipped from *Farnams, Massachusetts* and *New Braunfels, Texas*, are high calcium limes and are completely hydrated. They comply with ASTM C206-49 Type S and Federal Specification SS-L-351, and meet specifications limiting the unhydrated oxides to not more than 8 per cent.

All types of USG* hydrated lime except "IVORY" Finish Hydrate require overnight soaking. They yield a smooth, highly plastic putty of exceptional purity. Until the advent of pressure hydrates, such as "IVORY," they were the standards of excellence.

RED TOP and CHESHIRE Brands—Are high calcium finishing quicklimes. When properly slaked and aged for at least 16 hours, hydration is complete, (over 92%) thereby insuring against further hydration and attendant possibilities of expansion on the wall. Comply with ASTM Designation C5-26, and Federal Specification SS-Q-351. They have unusually high plasticity and purity.

GAUGING PLASTERS

1. **CHAMPION*** and **STAR*** are **WHITE** Gauging Plasters, for blending with lime putty to provide initial set and strength. They are ground to the proper fineness to blend readily and completely, thus minimizing the danger of check-cracking, crazing, etc. when properly used. They give strength and hardness to the surface finish. CHAMPION has a quicker "set" than STAR Gauging Plaster. They are the preferred gauging plasters because of the extreme whiteness of the finish when used with limes of high purity.

Complies with ASTM Designation C28-50 "Calcined gypsum for finishing coat" and Federal Specification SS-P-402, Type G.

2. **RED TOP GAUGING** is a "local" gauging plaster, so called because it is made from a rock grade that is used in basecoat plasters. It is available with slow or fast "set." It is distinguished from White Gauging Plasters by its darker color. Except for color, RED TOP Gauging Plasters are the equal of CHAMPION and STAR Gauging Plasters.

Compliance is the same as for "white" gauging plasters above.

3. **STRUCTO-GAUGE** is a new high strength gypsum gauging plaster for use with lime-putty to produce surfaces of extreme hardness and durability, designed for use in hospitals, schools and other buildings where a hard finish is desired. STRUCTO-GAUGE has excellent mixing qualities, applies easily and requires a minimum of troweling to produce a smooth finish.

Complies with ASTM Designation C28-50 "Calcined gypsum for finishing coat and Federal Specification SS-P-402, Type G, and, in addition, has a compressive strength (dry) of not less than 5000 psi.

PROPORTIONING—See Specifications

LIMITATIONS OF USE

1. For interior application only.

2. Recommended proportioning must be observed. Failure to use sufficient gauging plaster, to blend thoroughly, or to trowel adequately often results in check-cracking, crazing, lack of hardness and bond failure.

3. Designed for normal humidity conditions. Where excessive humidity or frequent exposure to moisture is expected, use keene's cement as later described.

4. Designed for normal usage. If hardness, and resistance to abrasion is required, use keene's cement or STRUCTO-GAUGE.

5. Must be applied to gypsum or lime plaster basecoat. Lime-gauging bond to portland cement plasters is inadequate. Do not apply direct to masonry.

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FINISHING PLASTERS—CONT.

KEENE'S-LIME FINISH

DESCRIPTION

RED TOP keene's cement is a high strength, white gypsum plaster. Keene's-lime finish is composed of lime putty blended with keene's cement in proportions required to obtain desired hardness.

Complies with ASTM Designation C61-40 and Federal Specification SS-C-161, Type I (Regular) and Type II (Quick Troweling).

FUNCTION AND UTILITY

In addition to those listed for lime putty-gauging, are:

Resistance to Abrasion. Keene's cement has exceptionally high strength and surface hardness. See Technical Data on page 38.

Low Water Absorption. Keene's cement, having a high density, has low water absorption.

Choice of Hardness. Keene's cement is mixed with lime putty in varying proportions for "hard" and "medium hard" finishes. See Technical Data and specifications.

Two Types. Regular and Quick Troweling. Regular keene's sets slowly, requires more troweling and may be used with any proportion of lime.

Quick Troweling keene's sets faster, requires less troweling and must be used with a minimum of 25 lbs. of dry hydrated lime per 100 lbs. of keene's cement.

LIMITATIONS OF USE

1. Keene's cement is for interior finishes only.

2. Keene's cement finish is not recommended where exposure to water is extreme or continuous. Use portland cement-lime plaster.

3. For application over gypsum basecoats of high compressive strength only.

MOULDING PLASTERS

Moulding Plasters are made for use in specialized work such as casting ornamental enrichments or running cornice. Moulding Plasters may be used either neat or with the addition of lime putty. In cast work, moulding plaster is used neat whereas for running cornice a small portion of lime is used. Moulding Plaster is available in white and local grades as well as in quick or slow set.

CASTING PLASTER

RED TOP Superfine Casting is similar to RED TOP White Moulding Plaster except that it has a much finer particle size. It is ideal for use in modeling done directly in the plaster. The fine particle size results in smoother castings showing excellent detail—important in the making of fine plaques and art statuary. Only water is added in mixing.

PREPARED GYPSUM FINISHES

RED TOP Gypsum Trowel Finish and RED TOP Gypsum Sand Float Finish

DESCRIPTION

RED TOP Trowel and Sand Float finishes are mill-prepared gypsum finish coat plasters requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

RED TOP Gypsum Trowel Finish—is used where hard, smooth surfaces are desired.

RED TOP Gypsum Sand Float Finish—is used where a quality float finish is desired.

Strength—approximately twice the strength of ordinary lime-gauging finishes.

Early Decoration—may be painted as soon as set and dry.

Factory Prepared—mill selection of ingredients and formulation insure uniform results and avoid variations possible with job mixing.

Non-Alkaline—contain nothing injurious to paint or decorations.

Bond—provides durable and natural bond to gypsum basecoat.

Cost—slightly higher than job-prepared finishes.

LIMITATIONS

1. Designed for application over gypsum basecoats only.

2. Should not be used on exterior surfaces where exposed to the elements or on interiors exposed to excessive moisture.

RED TOP COVER COAT FINISHING PLASTER

DESCRIPTION

Red Top Cover Coat is a mill prepared white gypsum bonding-finishing plaster requiring the addition of water only.

FUNCTION AND UTILITY

Red Top Cover Coat is a specially prepared finishing plaster designed to furnish an adhesive bond for application direct to smooth unpainted concrete (to which application of Bondcrete is not suited) and provide a finish surface ready for decoration.

Application specifications provide for one coat work, which is most economical and provides customary finish appearance; and two coat work, which provides a superior finish appearance. If sand float finish is desired, it must be two coat work.

LIMITATIONS

1. For interior application only.
2. Not recommended for application on exterior masonry walls.
3. Not designed for use on surfaces which are exposed to excessive humidity or where frequent exposure to water is expected.
4. Unprotected steel in surface of concrete may result in rust spots on Cover Coat, requiring subsequent decoration.
5. As a finishing plaster it is designed for application in a total thickness not to exceed an average of 1/8 of an inch.

ORIENTAL* INTERIOR COLORED FINISHES

DESCRIPTION

Oriental Interior Finish is a mill-prepared and colored finish plaster requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

Integrally Colored at factory, requiring no decoration. Permits early occupancy. Avoids variations of color intensity that are possible when colors are mixed at site.

Colors (with LIGHT REFLECTION for float finish).
White 81%; Pewter Gray—52%;
Surf Green—56%; Old Ivory—77%;
Desert Rose—56%; Azure—58%;
Sahara Gold—63%.

Texture—A finely floated surface or special textured finish may be obtained.

Strength—highly resistant to abrasion due to very great hardness.

LIMITATIONS OF USE

1. Oriental Interior is for producing finely floated surfaces or textures. Do not use for a smooth finish.
2. To be used on interiors only.

ACOUSTICAL PLASTER FINISHES (See full data on pages 2 and 3 Sec. 10a–uni)

SABINITE* ACOUSTICAL PLASTER

DESCRIPTION

Sabinite Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous *trowel or float finish* of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only. Basically mineral, it is incombustible.

HI-LITE ACOUSTICAL PLASTER

DESCRIPTION

Hi-Lite Acoustical Plaster is a highly efficient acoustical plaster with exceptional light reflecting qualities which provides a stipple, or stipple perforated finish. Having a harder surface than Sabinite finish, it is more suitable for side walls which require sound conditioning. It is manufactured in white only and requires the addition of water only.

LIMITATIONS (Both Types)

1. Designed for use on ceilings and areas not exposed to rough usage.
2. To insure best results, acoustical plasters must be applied in strict accordance with manufacturer's directions.
3. Not recommended over radiant heated panel areas, due to lower thermal conductivities.

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EXTERIOR STUCCO FINISH

ORIENTAL EXTERIOR COLORED FINISHES

DESCRIPTION

ORIENTAL Exterior Finish is a factory-prepared stucco for exterior application over a portland cement-lime basecoat. It requires the addition of water only on the job.

Colors: Pewter Gray, Eggshell Ivory, Sun Tan, Stone Gray, Copper Rose, Alamo Buff, Mission Green, Cascade Green, Pueblo Tan, Indian Coral, Rancho Brown and White.

FUNCTION AND UTILITY

Factory Prepared—Uniformity in formulation insures endurance under all weather conditions. Avoids possibility of job-mixing errors.

Integral Coloring—Prevents variations possible where colors are added at site.

Decoration—Requires none.

Adaptable to any texture.

LIMITATIONS

1. Not designed for use as a smooth trowel finish.
2. Requires a portland cement-lime basecoat.

EXTERIOR STUCCO BASECOAT

DESCRIPTION

Exterior stucco basecoat is prepared on the job from portland cement, lime, sand and water and is the basecoat that receives the ORIENTAL* Exterior (colored) Finish.

FUNCTION AND UTILITY

Exterior stucco basecoat is used for the scratch (first coat) and brown (second coat) over cement block or clay tile, or over sheathing to which STUCCO MESH or self-furring metal lath has been properly applied.

Fire Resistant—Made from portland cement, lime and sand, it will not support combustion.

Weather Resistant—Suitable for normal exposure to climatic variations.

Strong—Properly mixed and cured, it provides a dense, hard base that will withstand normal wear and usage.

Economical—Use of standard, readily available materials provides a low cost basecoat.

LIMITATIONS OF USE

1. Because of the use of portland cement, each coat requires curing with water after set.
2. Must not be applied in freezing weather or over bases containing frost.
3. Must not be used on smooth, dense surfaces or over old, unsound stucco unless stucco mesh reinforcement is first properly applied.

INTERIOR PORTLAND CEMENT-LIME PLASTER

DESCRIPTION

Portland cement-lime plaster basecoat is prepared on the job from portland cement, lime, sand, and water.

FUNCTION AND UTILITY

A portland cement-lime plaster is used for the basecoat over cement block, clay tile, or metal lath as a base for ceramic tile or in areas subject to high moisture conditions.

It is incombustible and strong.

LIMITATIONS OF USE

1. Because of the use of portland cement, each coat requires curing with water after set.
2. Must not be used over smooth, dense surfaces, gypsum lath or gypsum block without first securing metal lath to such surfaces.
3. Provisions for relief of setting and drying shrinkage should be made at locations such as ceiling-wall intersections, beams, columns, or fixtures passing through the plaster. Construction joints should be provided to avoid excessive continuous areas.

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PLASTERING SPECIFICATIONS

Note to Architect

Select one or more of the following base coat plasters, aggregates and finish coat plasters as desired or required to meet fire-resistant ratings. Where conductivity of the plaster is a factor, see limitations on Pages 34, 35, and 41.

I. SCOPE

Unless otherwise specified or shown on the drawings, all walls and ceilings shall be plastered as herein described.

II. GENERAL PROVISIONS

In cold weather, the temperature of the building shall be maintained in the uniform range above 55° for an adequate period prior to the application of plaster, while the plastering is being done, and after the plaster is dry. The heat shall be well distributed in all areas, with deflection or protective screens used to prevent concentrated or irregular heat on plaster areas near source. When required, heat shall be furnished by . . . .

. . . .

Ventilation shall be provided to properly dry the plaster during and subsequent to its application. In glazed buildings, this shall be accomplished by keeping windows open approximately 2″ top and bottom (or side pivoted windows approximately 4″) to provide air circulation; and, in enclosed areas or buildings lacking openings for natural ventilation by the use of temporary circulators or the air conditioning system.

If glazed sash are not in place and the building is subjected to hot, dry winds or temperature differentials from day to night of 20° F. or more, openings shall be screened with cheesecloth or similar material.

III. GROUNDS

The minimum thickness of plaster over 16″ x 48″ gypsum lath, gypsum partition tile or fiber insulation lath, shall be ½″; over brick, clay tile or other masonry, it shall be ⅝″ thick; over metal lath, the plaster thickness shall be ⅝″ measured from the face of the lath; and ¾″ over long length gypsum lath. (A greater thickness in grounds may be required for certain fire ratings. See table, page 37, and specify accordingly.)

IV. MATERIALS

Base Coat Plaster shall be (STRUCTO-LITE) (RED TOP Cement Plaster) (RED TOP Wood Fiber Plaster) (BONDCRETE) as manufactured by the United States Gypsum Company.

Aggregate (for cement plaster) (wood fiber over masonry) shall be (Sand) (Perlite) (Vermiculite) meeting the requirements of ASTM Designation C35-53T—"Inorganic Aggregate for use in Interior Plastering."

Aggregate for job mixed sand float finish shall be a graded silica sand all passing a (30 mesh) (20 mesh) screen.

Water shall be clean, fresh and suitable for domestic consumption.

For (Exterior Stucco Base) (Portland Cement-Lime plaster) the **Portland Cement** shall comply with A.S.T.M. Designation C150-47, the **Lime** shall be MORTASEAL as manufactured by the United States Gypsum Company, and the **Sand** shall be clean and sharp and shall meet their requirements of American Standards Association Specifications. A42-2.

Finish Coat Plaster shall be:

a. Gypsum gauged lime putty trowel finish made from IVORY Pressure Hydrated Lime and (CHAMPION Gauging Plaster) (STAR Gauging Plaster) (RED TOP Gauging Plaster) as manufactured by the United States Gypsum Company.

b. High strength gypsum gauged lime putty trowel finish made from Ivory Pressure Hydrated Lime and (STRUCTO-GAUGE) (RED TOP Quick Trowelling Keene's Cement) as manufactured by the United States Gypsum Company.

c. RED TOP Gypsum Trowel Finish as manufactured by the United States Gypsum Company.

d. RED TOP Gypsum Sand Float Finish as manufactured by the United States Gypsum Company.

e. ORIENTAL Interior Colored Finish as manufactured by the United States Gypsum Company.

f. A job mixed sand float finish made from IVORY Pressure Hydrated Lime, RED TOP Keene's Cement and silica sand.

g. RED TOP Cover Coat Finishing Plaster for monolithic concrete as manufactured by the United States Gypsum Company.

h. (SABINITE Acoustical Plaster) (Hi-Lite Acoustical Plaster) as manufactured by the United States Gypsum Company.

i. Ornamental run mouldings and Cast enrichments made with RED TOP Moulding Plaster and USG Casting Plaster as required.

j. Exterior finish coat shall be ORIENTAL Exterior Colored finish as manufactured by the United States Gypsum Company.

V. SURFACE PREPARATION

a. Concrete to which RED TOP Cover Coat Finishing Plaster is to be applied shall have all laitance and efflorescence removed by dry brushing and the surface scrubbed with naphtha or mineral spirits to remove grease and oil. Brush or spray surface with cover coat bonder to "neutralize" surface alkalinity and then allow to dry. Patch holes and other surface defects with a paste of Cover Coat.

b. Monolithic concrete to which BONDCRETE is to be applied shall be cleaned of all dust, loose particles and other foreign matter. Laitance and efflorescence shall be removed by washing with a 10% solution of commercial muriatic acid and water, and then cleaning with water to remove all traces of acid. Grease and oil shall be completely removed. Concrete surfaces shall have sufficient roughness to provide proper bond. If surfaces are not rough, they shall be hacked or bush-hammered, or dash coated with portland cement grout composed of one part of cement and one and one-half parts of fine sand mixed to a mushy consistency. Using a stiff fiber brush, the portland cement

PLASTERING SPECIFICATIONS—CONT.

grout shall be forcibly dashed on the concrete surface with a whipping motion. This coat shall be kept damp for at least two days immediately following its application and then allowed to dry. Before application of the plaster, the surface shall be evenly dampened if necessary to reduce suction.

c. Monolithic concrete surfaces to which asphalt emulsion is applied as bonding medium for acoustical plaster must be dry, and free of dust, oil, grease or efflorescence.

d. Unit masonry surfaces that exhibit high suction shall be moderately wetted immediately before plastering.

VI. BASE COAT PROPORTIONS

a. Structo-Lite shall be regular formula for all lath bases and masonry formula for masonry bases.

b. Red Top Cement Plaster for the scratch or first coat over all lath bases in three-coat work shall be mixed in proportion of (one part of plaster to not more than two parts of sand by weight) (100 pounds of plaster to two cubic feet of perlite) (100 pounds of plaster to two cubic feet of vermiculite).

Red Top Cement Plaster for all unit masonry surfaces and for the brown or second coat over lath bases shall be mixed in the proportion of (one part plaster to not more than three parts sand by weight) (100 pounds of plaster to three cubic feet of perlite) (100 pounds of plaster to three cubic feet of vermiculite).

Red Top Cement Plaster, when mixed for two-coat work over gypsum lath, shall be mixed in the proportion of (one part of gypsum to not more than 2½ parts of sand by weight) (100 pounds of gypsum to not more than 2½ cubic feet of perlite) (100 pounds of gypsum to not more than 2½ cubic feet of vermiculite).

c. Red Top Wood Fiber Plaster. For application over all types of lath, shall be mixed with water only.

For masonry surfaces (except monolithic concrete), the scratch and brown coats of wood fiber plaster shall have (one part of sand by weight) (one cubic foot of perlite per 100 pounds) (one cubic foot of vermiculite per 100 pounds) added.

d. Bondcrete shall be mixed with clean water only.

VII. GROUT

Grout for door bucks and flush metal base shall be (Structo-Lite) (Red Top Cement Plaster) and not more than (300 pounds sand) (3 cubic feet of perlite) per bag of plaster.

VIII. MIXING OF BASE COATS

For hand mixing, the mixing boxes shall be water-tight and thoroughly clean of all set or hardened material. All tools and equipment shall be cleaned after mixing each batch. Do not mix more material than can be used in one hour.

a. Structo-Lite shall be mixed with clean water only and hoed to uniform application consistency.

b. Red Top Cement Plaster and aggregate shall be mixed dry to a uniform color at one end of the box, hoed into the water at the other end and thoroughly mixed to proper consistency.

c. Red Top Wood Fiber Plaster shall be mixed with clean water only and hoed to uniform application consistency. (For application over masonry aggregate shall be added and dry mixed prior to adding water.)

d. Bondcrete shall be mixed with clean water only and hoed to uniform application consistency.

For mechanical mixing, the mixer shall be cleaned of all set or hardened material before materials for a new batch are loaded. Each batch shall be mixed separately. Material that has partially set shall not be retempered or used. Mix no more material than can be used in one hour.

a. For Structo-Lite plaster, no aggregate shall be added. Put the approximate amount of water in the mixer and add the Structo-Lite and mix to proper application consistency, adding water if necessary, and dump the entire batch and use.

b. Red Top Cement Plaster; put the approximate amount of water required in the mixer, then, while the mixer is in continuous operation, add approximately half the amount of aggregate required, add all of the plaster and add the remainder of the aggregate. Mix to proper application consistency, adding water if necessary, and dump the entire batch.

c. For Gypsum Wood Fiber Plaster; add the approximate amount of water required. Then add the plaster and mix to proper application consistency. When sand is added for application over masonry bases, add the water, then the sand, and then add the plaster and mix to proper application consistency.

d. For Bondcrete Plaster, add clean water only, then add the plaster and mix to proper application consistency.

e. For (Exterior Stucco) (Portland Cement-Lime plaster), the scratch (first coat) shall be mixed in the proportion of one bag of portland cement; two bags of Mortaseal (or two cubic feet of lime putty) and seven and one-half cubic feet of sand (approximately 45 No. 2 shovels). For application over stucco mesh or self-furring metal lath, approximately two pounds of fiber or hair shall be added to each mix of the above proportions.

The brown coat (second coat) shall be mixed in the proportion of one bag of portland cement, two bags of Mortaseal (or two cubic feet of lime putty) and nine cubic feet of sand (approximately 55 No. 2 shovels).

IX. GROUTING

a. All steel door bucks in 2″ solid lath and plaster partitions shall be fully grouted prior to lathing, leaving a groove to receive the lath.

b. All 2½″ flush metal base for 2″ solid lath and plaster partitions and furred exterior walls shall be grouted. (Provide a V-Groove to receive (Rocklath plaster base) (⅜″ Riblath). (Grout after channel studs are erected for channel stud metal lath partitions.)

X. BASE COAT APPLICATION

a. For two coat work over gypsum lath and masonry, the base (first) coat shall be applied with sufficient material and pressure to form a good bond on the gypsum lath or masonry, as the case may be, and to cover well, and then be doubled back to bring the plaster out to grounds, straightened to a true surface with rod and darby, and left rough, ready to receive the finish (second) coat.

b. For three coat work, the scratch (first) coat shall be applied with sufficient material and pressure to form good full keys on metal lath, and a good bond on gypsum or fiber insulation lath, as the case may be, and to cover well, and then be scratched to a rough surface. The brown (second) coat shall be applied after the scratch (first) coat has set firm and hard, brought out to grounds and straightened to a true surface with rod and darby and left rough, ready to receive the finish (third) coat.

c. For 2″ solid gypsum lath and plaster partitions, apply a scratch coat of plaster with a maximum 3 hour set, about ⅜″ thick, to each side of the lath. In no case, shall application of scratch coat to second side of lath be delayed longer than the setting time of the scratch coat applied to the first side. Scratch lightly in horizontal direction only.

After the scratch coats have set firmly and have partially dried (but not less than 16 hours), the brown coat shall be applied to the unbraced side, bringing it out to within 1/16″ of ground dimension for finish coat to bring overall partition thickness to 2 inches. When brown coat has set firmly (but not less than 3 hours), braces shall be carefully removed from opposite side and brown coat applied to that side in a manner similar to that described for the other brown coat.

d. For 2″ solid studless metal lath and plaster partitions apply scratch coat and allow it to set and partially dry. Then apply brown coat to side opposite braces, allowing it to set thoroughly before removing temporary braces. Next apply brown coat to previously braced side, bringing it out to sufficent grounds to make overall partition thickness 2″ when finish coats are applied to both sides.

e. For 2″ channel stud, metal lath and plaster partitions apply scratch coat on lath side and allow it to set and partially dry. Then apply back-up coat on channel side applied to full grounds in not less than two operations and allow to set. Next apply brown coat on lath side bringing it out to sufficient thickness to make overall partition thickness 2″ when finish coats are applied to both sides.

f. For resilient Rocklath ceilings, three coat plaster work shall be used. Apply a full scratch coat, cross rake and allow to set. Then apply brown coat to bring total thickness of plaster to 7/16″ over the lath, darby level and leave rough ready for finish coat.

g. For (exterior wall furring) (hollow partitions) having long length Rocklath three coat plaster work shall be used to a total thickness of ¾″ over the lath.

h. For column fireproofing total thickness of plaster over lath face shall be (½″) (⅝″) (1″) (1⅜″) (1¾″). Apply a full scratch coat, cross rake and allow to set. Then apply brown coat to within 1/16″ of thickness required and leave level and rough ready for application of finish coat.

i. Where plaster finish is flush with metal bases, bucks, window frames or similar constructions, both the brown coat and the finish coat should be grooved back at the intersection to reduce possibility of chipping of plaster at these points.

j. At windows, doors and other openings all base coat plaster across head of opening and 12 inches down, each side, shall be cut free of buck, frame or grounds with edge of trowel, after stiffening but before setting, to allow for expansion.

k. Scratch coat of (Exterior stucco) (Portland cement—Lime plaster) shall be applied in a full ⅜″ coat, with sufficient pressure to form a good bond with masonry surfaces or to force it through and completely embed the metal reinforcement. Cross scratch and, after set, damp cure for not less than 48 hours.

Brown coat shall be applied over the dampened scratch coat in a full ⅜″ coat with sufficient pressure to form a good bond, rodded level and left rough, using a broom if necessary. After set, damp cure for at least 48 hours before applying the finish (third) coat.

Damp curing of each coat shall be accomplished by applying water in a fine, fog spray. Apply only as much water as is readily absorbed. The frequency of spraying required will depend on the weather exposure, more frequent applications being required during hot, dry and windy weather.

XI. PREPARATION OF LIME PUTTY

Ivory Finishing Lime shall be mixed with clean water only, using approximately 5½ to 6 gallons per bag. The putty may be prepared by overnight soak, or by mixing by hand or machine. Run mixer for sufficient time to get a smooth, thoroughly mixed putty which can be used immediately or run into a box for use as required. When stored in a box after mixing, do not permit putty to get crusty or to dry out. Mixer, tools and equipment must be clean.

XII. PROPORTIONS OF FINISH COATS

a. Gypsum gauged lime putty finish shall be mixed in the proportions of 100 pounds of gauging plaster to 200 pounds of dry lime (400 pounds, or 34 gallons, of lime putty).

b. Medium hard Structo-Gauge-Lime Putty Finish shall be mixed in the proportion of 100 pounds of (Structo-Gauge) to 200 pounds of dry lime (400 pounds, or 34 gallons, of lime putty).

c. Hard Structo-Gauge-Lime Putty Finish shall be mixed in the proportion of 100 pounds of Structo-Gauge to 100 pounds of dry lime (200 pounds, or

17 gallons, of lime putty).

d. Medium hard Keene's Cement-Lime Putty Finish shall be mixed in the proportion of 100 pounds of Keene's Cement to 50 pounds of dry lime (100 pounds, or 8½ gallons of lime putty).

e. Hard Keene's Cement-Lime Putty Finish shall be mixed in the proportion of 100 pounds of Keene's Cement to 25 pounds of dry lime (50 pounds, or 4¼ gallons of lime putty).

f. Keene's Cement-Sand Float Finish shall be mixed in the proportion of 100 pounds of Keene's Cement to 50 pounds of dry lime and 400 pounds of sand (100 pounds, or 17 gallons of lime putty and 4 to 5 cubic feet of sand (27 No. 2 shovels of sand).

g. Red Top Gypsum Trowel Finish shall be mixed with clean water only to proper application consistency.

h. Red Top Sand Float Finish shall be mixed with clean water only to proper application consistency.

i. Oriental Interior Colored Finish shall be mixed with clean water only to proper application consistency.

j. Red Top Cover Coat Finishing Plaster, for smooth finish, shall be mixed with clean, *warm* water only. For sand float finish, 1½ parts of silica sand by weight to one part of Cover Coat shall be added in the finish coat only.

k. Oriental Exterior Colored Finish shall be mixed with clean water only to proper application consistency.

XIII. APPLICATION OF FINISH COATS

Finish coat shall be applied over a partially dry, level and roughened gypsum base coat. NOTE: *Except Cover Coat Finishing Plaster, which shall be applied over Cover Coat Bonder direct to concrete, and Sabinite or Hi-Lite Acoustical Plaster, which may be applied over emulsified asphalt.*

The finish coat shall be scratched in thoroughly and immediately doubled back to fill out to a true, even surface. Thickness to be 1⁄16″ to ⅛″. (Except Acoustical Plaster which shall be ½″ thick.)

a. Trowel finishes shall be water troweled during set to provide a smooth, dense surface for decoration, free of irregularities and blemishes.

b. Float finishes shall be floated with shingle, wood, carpet or rubber float to bring aggregate to the surface and produce a finish free of slick spots, cat faces, and other blemishes. In natural color finishes, use water sparingly while floating. Do not use water while floating colored finishes.

c. Textures shall be applied in such a manner that they will match the sample approved by the architect.

d. Sabinite Acoustical Plaster finish shall be applied according to manufacturer's directions which are hereby made a part of this specification.

e. Hi-Lite Acoustical Plaster finish shall be applied according to manufacturer's directions, which are hereby made a part of this specification.

f. (1) Cover Coat shall be applied in one coat over a properly prepared and dry concrete surface by scratching in a thin coat completely covering the concrete and doubling back with a thin coat, levelling out the surface with light trowelling. When the finish has taken up, trowel with water to a smooth, level surface. Total thickness not to exceed an average of ⅛″.

f. (2) Cover Coat shall be applied in two coats over a properly prepared and dry concrete surface by scratching in a thin coat completely covering the concrete and allowing it to set and dry. Second coat shall be then applied, covering first coat evenly and levelling out the surface with light trowelling. When finish has taken up, trowel with water to a smooth, level surface, float with sponge or shingle to a uniformly sandy textured finish. Total thickness not to exceed an average of ⅛″.

g. Ornamental plaster shall be executed in accordance with the full-sized details shown on the drawings. Cornices and moldings shall be run full, straight and true with molding plaster, using clean cut metal templets conforming to the profiles shown on the drawings. Lines shall be in alignment, with true intersections, and accurate mitres at corners and angles. Enriched ornamental work which cannot be run in place shall be cast with casting plaster in gelatine molds. The work shall be solidly backed with jute or burlap, shall be properly reinforced with galvanized iron, and shall be securely stuck and wired in place with copper wires not lighter than 16 gauge. All joints shall be carefully made and neatly pointed so as to be invisible. All rough spots shall be eliminated with fine sandpaper, and the entire work left in proper condition, ready for decoration.

h. Oriental Exterior colored finish shall be mixed and applied in strict accordance with the manufacturer's directions. Color and texture to be designated and approved by the architect or his representative.

XIV. PATCHING

Point up around trim and other work. Cut out and patch defective and damaged plaster. Patching of plaster shall match existing work in texture and finish and joinings with plaster previously applied shall finish flush and smooth.

XV. COMPLETION

At the completion of the finish plaster work, clean all plaster from beads, screeds, metal base and metal trim, leaving work ready for decoration by others. Remove all plaster rubbish from the building, leaving floors broom clean. Remove excess material from the job site. Remove all scaffolding, tools and other equipment from the building and job site.

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UNITED
STATES
GYPSUM

AIA FILE NUMBER 4-E-6

TECHNICAL INFORMATION

THREE-INCH SHORT SPAN
(NAILING TYPE)

GYPSUM ROOF TILE

UNITED STATES GYPSUM
The Greatest Name in Building

April, 1954

AIA FILE NUMBER 4-E-6

3″ SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE

DESCRIPTION

3″ Short Span (Nailing Type) Gypsum Roof Tile are precast, solid, reinforced gypsum roof deck units, usually supported by steel tee sub-purlins. A grouting groove along top edges is provided.

Size—3″ x 12″ x 30″.

FUNCTION AND UTILITY

NAIL-HOLDING POWER. These slabs are cast from a dense, hard gypsum, to give maximum nail-holding power in a low cost nailing type deck. (See Technical Data Tables for various nail holding values.)

FIREPROOF. Composed almost entirely of gypsum, these units will not burn or transmit high temperatures until completely calcined—a very slow process.

STRONG. 3″ Short Span (Nailing Type) Gypsum Roof Tile will safely support a load of over 100 pounds per sq. ft., uniformly distributed. The size of sub-purlins is usually determined by the design load which seldom exceeds 60 pounds per sq.ft.The sub-purlins, welded to roof members, give bracing strength and rigidity to the frame. See Technical Data for sub-purlin sizes.

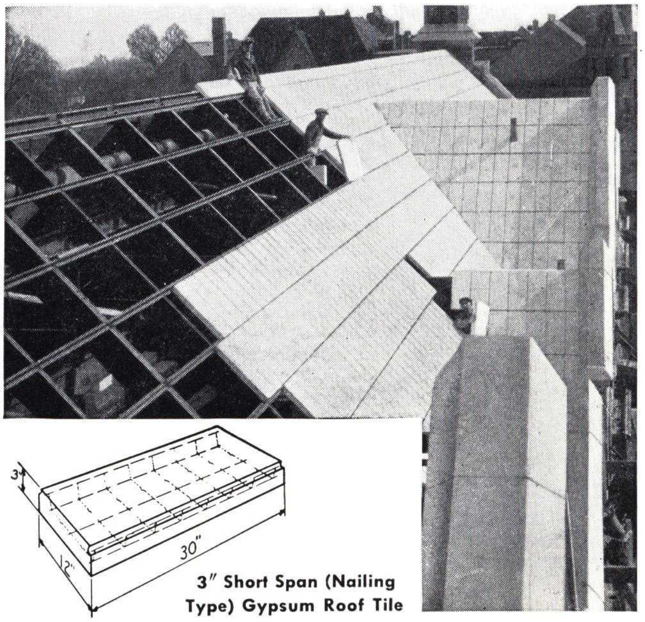
LIGHT WEIGHT. Only 17 pounds per square foot exclusive of sub-purlins. Light dead load saves structural steel.

INSULATION VALUE. With a "U" factor of .48 Btu per hour, per square foot, per degree difference in temperature, including roof covering, it provides adequate insulation for all normal requirements.

ADAPTABLE.

(a) 3″ *Short Span Gypsum Roof Tile* are designed especially for pitched roof decks but are adaptable to flat or slightly curved or warped surfaces as well.

(b) *Winter construction.* Since units are precast, requiring little grout (after deck is in place), many winter delays are avoided.



3″ Short Span (Nailing Type) Gypsum Roof Tile

(c) *Speed of erection.* Convenient size and weight of tile make possible fast erection.

LIMITATIONS OF USE

1. *Job protection.* During job storage, gypsum tile should be reasonably protected from exposure to rain and snow, and the roof covering should be applied as quickly as possible after installation of gypsum tile.

2. *Roof covering.* Built-up roof coverings should be applied according to standard specifications of roof covering manufacturers. For application of slate or tile, corrosion-resistant nails should be used.

3. *Excessive moisture.* 3″ Short Span Gypsum Roof Tile are designed for use on buildings having normal humidity. Whenever continuous high humidity is anticipated, such as in wet process plants, consult the nearest United States Gypsum Sales Office for recommendations.

4. *Excessive temperature.* 3″ Short Span Gypsum Roof Tile are designed for use on buildings having normal to moderately high temperatures. Where unusually high temperatures are anticipated, such as in foundries, furnace rooms, over exposed breechings, etc., consult the nearest United States Gypsum Sales Office for recommendations.

TECHNICAL DATA TABLES

THERMAL CONDUCTIVITY

BRITISH THERMAL UNITS (Btu) PER SQUARE FOOT PER HOUR PER DEGREE FAHRENHEIT DIFFERENCE IN TEMPERATURE.

NO INSULATION	½″ INSULATION	1″ INSULATION
0.48	0.28	0.19

NAIL HOLDING VALUES FOR 3″ GYPSUM TILE

Resistance to direct pull in pounds per nail for penetration shown

TYPE OF NAIL	La Belle Square Cut Nails (Wheeling)				Tinneramn C-3459S-080	Wire Nail
	5 Penny	6 Penny		7 Penny	Wire Clinch	6 Penny
	Shingle	Common	Cornice	Common	Use With Tin Cap	Special
Finish	Galv.	Galv.	Galv.	Galv.	Galv.	Cement Coated
Lengths	1¾″	2″	2″	2¼″	1¼″	2¼″
Penetration	1½″	1¾″	1¾″	2″	1″	1¾″
Nail Holding Power in Pounds per Nail in Dry Tile	150.5	267.0	273.0	323.0	121.0	175.0

NOTES:
1. Values shown are from tests conducted by USG Research Laboratory.
2. Nails were driven by hand with a hammer, then immediately withdrawn by means of a weighted lever arm.
3. The dry density of the gypsum tile was approximately 68 pounds per cubic foot.
4. The Tinnerman Wire Type Clinch Nail must be driven through metal discs to operate the clinching mechanism.

STEEL SUB-PURLINS

SPACED 2′-6¾″ O.C.
BASED ON TOTAL ROOF LOAD OF 55 LBS. PER SQ. FT. AND M 1/10 WL

SUB-PURLINS		WEIGHT PER LIN. FOOT SUB-PURLIN	WEIGHT PER SQ. FOOT ROOF	ALLOWABLE SPAN	
SIZE	SECT. MOD.			18,000 LBS. PER SQ. IN. STRESS	20,000 LBS. PER SQ. IN. STRESS
NO. 178 BULB TEE	.294 in³	2.40 LBS.	0.94 LBS.	5′-7″	5′-11″
NO. 218 BULB TEE	.469 in³	2.85 "	1.09 "	7′-0″	7′-5″
NO. 200 BULB TEE	.460 in³	3.02 "	1.17 "	7′-0″	7′-5″
2½″x2½″x5/16″ STD. TEE	.500 in³	5.50 "	2.14 "	7′-3″	7′-8″
NO. 214 BULB TEE	.510 in³	3.20 "	1.25 "	7′-4″	7′-9″
2½″x3″x5/16″ STD. TEE	.720 in³	6.10 "	2.38 "	8′-9″	9′-3″
3″x3″x5/16″ STD. TEE	.740 in³	6.70 "	2.61 "	8′-10″	9′-4″

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"PYROFILL" and "PYROCELL" identify the particular gypsum fiber cements manufactured only by United States Gypsum.

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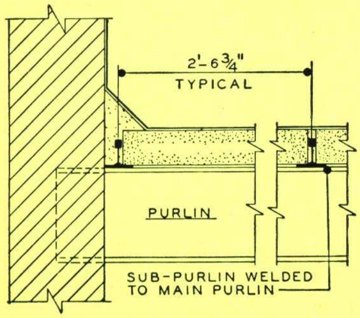
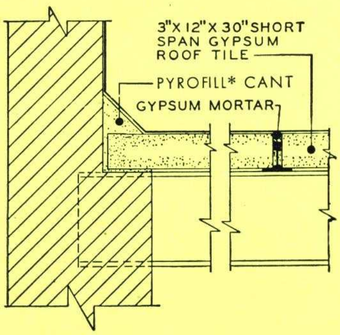
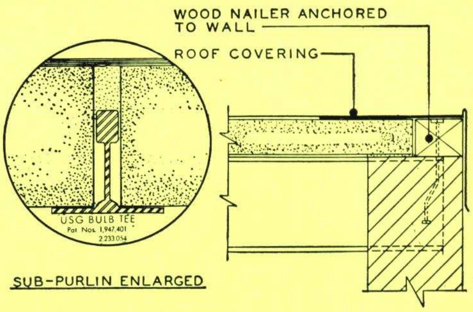
3" SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE

PARAPET & END WALLS:

SCALE: 3/4" = 1'-0"



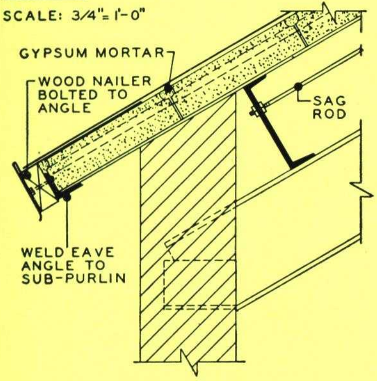


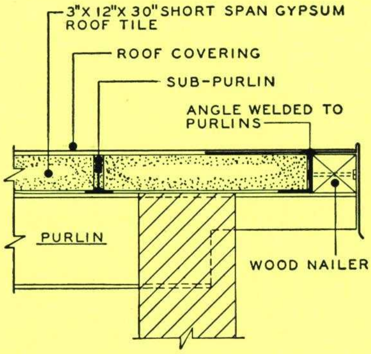


SUB-PURLIN ENLARGED

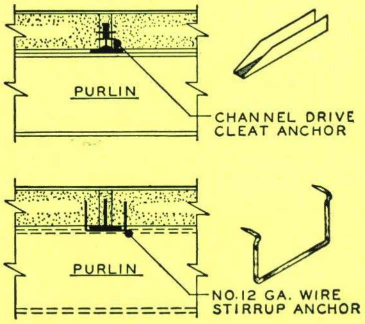
EAVES:

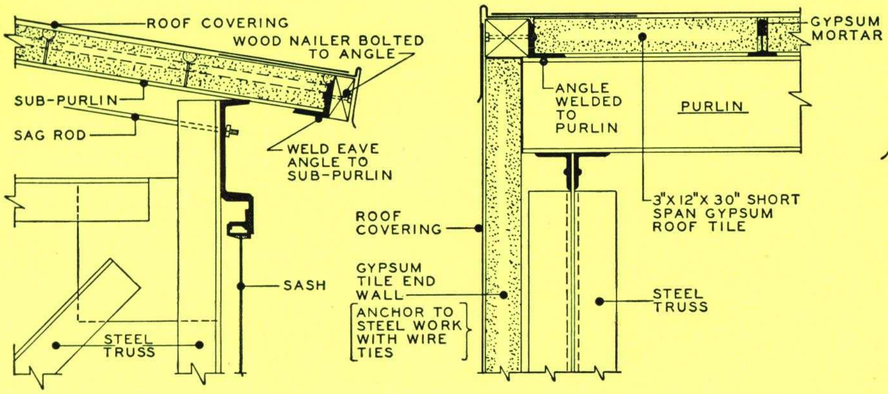
SCALE: 3/4" = 1'-0"

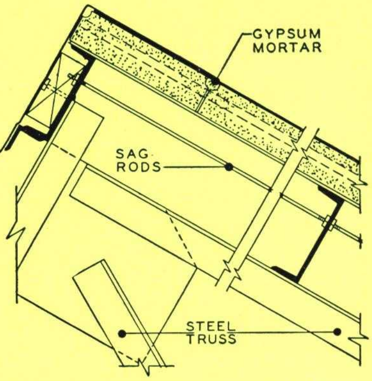




ANCHORAGE

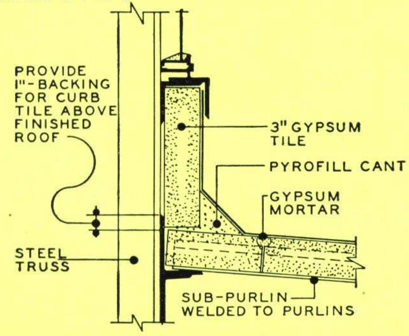


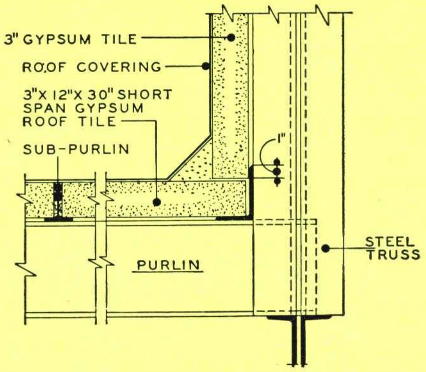

ROOF COVERING
WOOD NAILER BOLTED TO ANGLE
SUB-PURLIN
SAG ROD
WELD EAVE ANGLE TO SUB-PURLIN
SASH
STEEL TRUSS
GYPSUM MORTAR
ANGLE WELDED TO PURLIN
PURLIN
3"X 12"X 30" SHORT SPAN GYPSUM ROOF TILE
ROOF COVERING
GYPSUM TILE END WALL
ANCHOR TO STEEL WORK WITH WIRE TIES
STEEL TRUSS

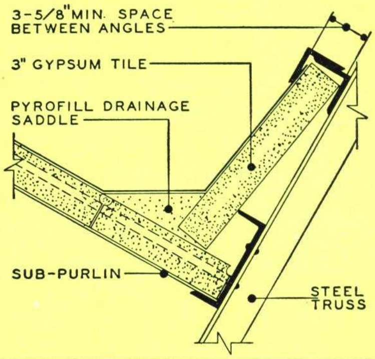


CURBS:

SCALE: 3/4" = 1'-0"


PROVIDE 1"-BACKING FOR CURB TILE ABOVE FINISHED ROOF
3" GYPSUM TILE
PYROFILL CANT
GYPSUM MORTAR
STEEL TRUSS
SUB-PURLIN WELDED TO PURLINS





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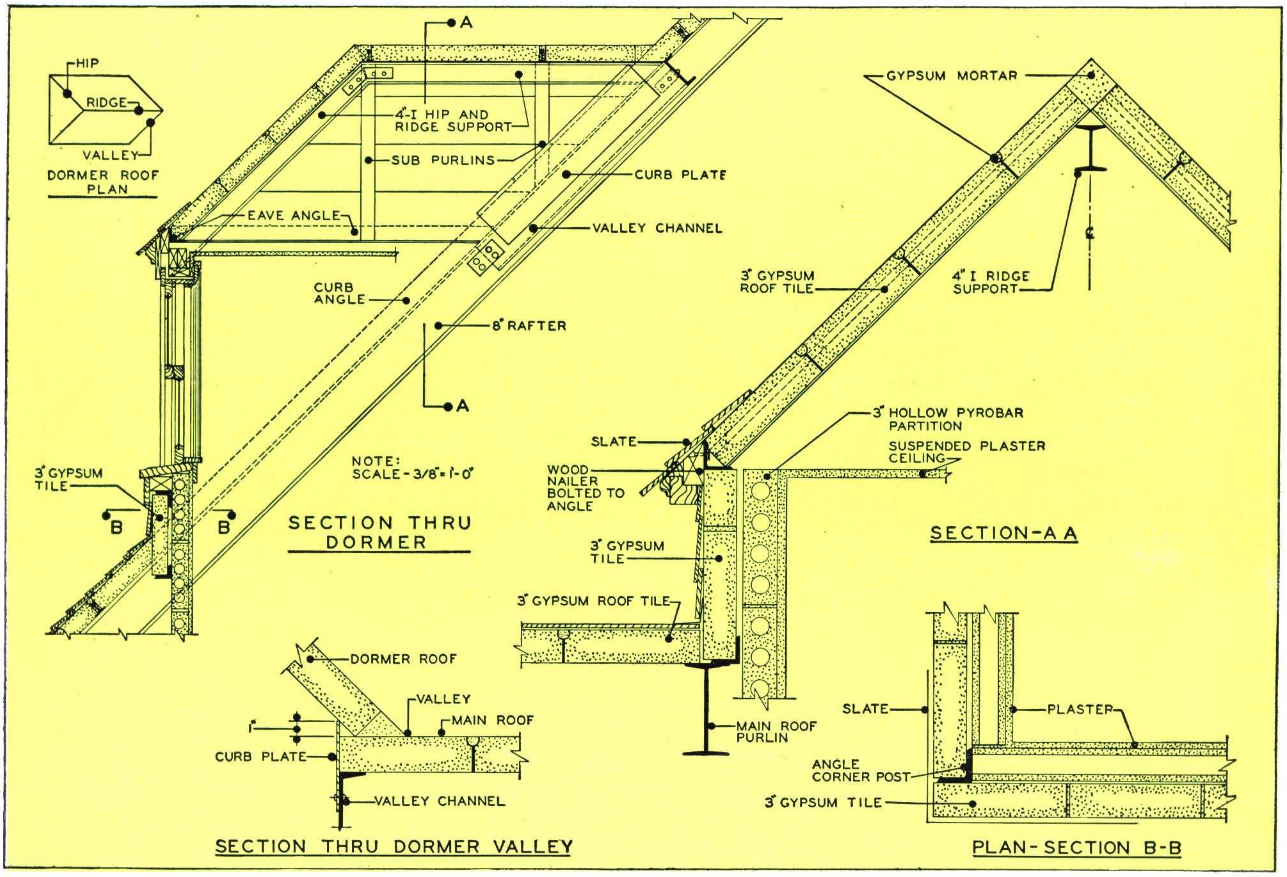
3″ SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE



SPECIFICATIONS

SCOPE

Unless otherwise shown or specified, all roof areas are to receive 3″ solid short span precast reinforced gypsum roof tile complete with steel sub-purlins and gypsum grouting mortar. All curbs, cants and saddles are to be included as shown or required.

MATERIALS

Sub-Purlins—Steel sub-purlins to be bulb tees or standard structural tee sections of required section modulus. (See table page 2.) All sub-purlins to have one shop coat of paint. Sub-purlins to be cut to length so that ends occur over supports.

Roof Tile. Shall be 3″ Short Span (Nailing Type) Gypsum Roof Tile, manufactured by United States Gypsum Company.

Grouting Mortar. To be United States Gypsum Company's Grouting Cement, sanded at the job site in the proportion of one part cement to two parts of clean, sharp sand, by volume.

Curbs. Shall be 3″ solid precast Gypsum Tile, manufactured by United States Gypsum Company.

Cants and Saddles. To be PYROFILL* or STRUCTO-LITE* gypsum fiber concrete, manufactured by United States Gypsum Company.

ERECTION

Sub-Purlins. Place steel sub-purlins across main roof purlins at 30¾″ o.c. Weld each sub-purlin to main purlins with one weld at each intersection, using a ¾″ long fillet weld on alternate sides of sub-purlins where accessible. All ends of sub-purlins shall bear on roof supports.

Roof Tile. Place roof tile dry between sub-purlins with sides butted tightly together and with ends bearing equally on flanges. Cut tile to fit at all walls, curbs, ridges, hips, valleys and openings as required. Grout all joints from the top with gypsum grouting mortar. Fill flush to the top surface of the tile and cut off excess mortar. All roof areas to be left clean and free of debris, ready to receive the weatherproofing specified elsewhere.

Curbs. Install curbs as shown on drawings. Tile to be laid in gypsum cement mortar and anchored to steel framing as required.

Cants. Shall be accurately formed to a line.

Saddles, or drainage fills. Shall be placed as shown and left smooth to receive roof covering.

OPTIONAL INCLUSIONS

1. *For eaves, rakes, etc.* At all overhanging portions of roofs, such as eaves, etc., provide a 2½″ x 2½″ eave angle, welded to sub-purlins or out-lookers to provide a solid stop for roof tile. Provide wood nailers, bolted to eave angles, where shown or required.

2. *Where pitch of roof exceeds 45°*, 3″ Short Span Gypsum Roof Tile shall be secured to sub-purlins with special wire ties nailed into sides of adjacent tile and extending below and around the sub-purlin; or if bulb tee sub-purlins are used, steel wedges may be used in end joints between tile and web of sub-purlins. When pitch of roof exceeds 45°, consult nearest United States Gypsum sales office for recommendation on the application of slate, architectural tile, etc.

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3" SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE

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